



December 7, 2001

Please Reply:
Margaret A. Kirick
Chief Patent Counsel

Mr. Robert A. Kent, Esquire
Halliburton Energy Services, Inc.
2600 S. Second Street
Duncan, OK 73536-0440

Rc: *U.S. Patent Nos. 6,220,349; 5,984,007; 5,839,515; 5,701,959; 5,540,279;*
5,390,737; 5,271,468; and 5,224,540

Dear Mr. Kent:

This letter is in response to your letter of August 29, 2001 regarding the above-referenced Halliburton patents and BJ Services' Python bridge plug. As set forth below, the Python bridge plug does not infringe any valid claim of any of the above-referenced Halliburton patents.

The '349 patent is directed to a packing apparatus made primarily of non-metallic composite materials. Claims 1-21 of the '349 patent are limited to a packing apparatus having, among other things, a single set of slips. Halliburton specifically amended these claims to include the "single set of slips" limitation to overcome the Examiner's prior art rejection of these claims. Halliburton's amendment and related arguments indicate a clear surrender of claim coverage for bridge plugs having more than a single set of slips. The Python bridge plug has a dual set of slips. The remaining claims of the '349 patent require a ratchet body disposed about the apparatus' mandrel and defining a cavity therein, and a ratchet disposed in the cavity for engaging and holding the mandrel when the apparatus is in the set position. Such structure is totally missing from the Python bridge plug.

The '007 patent is directed to chip resistant buttons for slip elements in downhole tools, such as bridge plugs. Each of the claims of the '007 patent require at least one slip button for the slips. The Python bridge plug uses conventional cast iron slips. BJ's tool does not use slip buttons in its slip segments.

The '515 patent is directed to purported improvements in the initial retention of the slip elements for downhole drillable packers, bridge plugs and the like. The retaining system includes at least one elastic O-ring used in conjunction with a conventional frangible retaining band. Each claim of the '515 patent includes at least one elastic member used

in conjunction with at least one frangible retaining member for retaining slip segments for a downhole tool in the unset position. BJ Services' Python bridge plug does not include an elastic member for retention of the slip segments. Instead, the Python bridge plug uses the prior art slip retention system that is disclosed in the '515 patent.

The '959 patent is directed to a downhole tool which utilizes segmented packer retaining shoes and a method of using the same. Each of the claims of the '959 patent requires at least one retaining shoe made of segments having a cavity, shoe segments retaining means, and at least one shoe-segment-to-shoe-segment-gap-spanning-structural-member. The Python bridge plug uses a solid backup ring comprised of wire mesh impregnated with rubber. Since the ring is solid, it has no segments, no segments with cavities, and no shoe segments retaining means. Nor does the Python bridge plug have any shoe-segment-to-shoe-segment-gap-spanning-structural-members as no gaps are present in the Python's solid backup rings.

The '279 patent is directed to packer element retaining shoes for downhole tools, such as bridge plugs. Each of the claims requires the packer element retaining shoe(s) to be composed of non-metallic material. The Python bridge plug uses conventional metallic backup rings which are made of wire mesh, impregnated with rubber. Such backup rings have been used in downhole tools, such as bridge plugs, since at least the mid-1980's. The claims also require that the packer element retaining shoe(s) comprise a plurality of shoe segments. The backup rings for the Python bridge plug are solid rings and, thus, are not segmented.

The '737 patent is directed to downhole tools, such as bridge plugs and packers, utilizing non-metallic components. Each of the claims of the '737 patent requires at least one of the following: (1) a sliding valve disposed on a mandrel and being slidable for opening and closing a port on the mandrel; (2) a non-metallic center mandrel which is molded; (3) packing means located below a port; and/or (4) a mandrel having a molded central opening. The Python bridge plug does not have a slideable valve disposed on its mandrel for opening and closing mandrel ports. Further, the mandrel of the Python bridge plug is not molded nor has a molded opening therein. Nor does the Python have a packing means located below a mandrel port.

The '468 patent is directed to a downhole device, such as a packer or bridge plug, that is comprised of non-metallic components to facilitate drilling out the device. The patent is further directed to new drilling methods that may be employed which are compatible with drilling non-metallic downhole devices. At least claims 1-7, 30-34, 39, 40 and 73 of the '468 patent are invalid in light of the prior art. More particularly, these claims are anticipated and/or obvious in light of the Baker Prime Fiberglass Packer, Product 739-09 from Baker Oil Tools, Inc. (the specification sheet attached as Exhibit 1), the June 1968 World Oil Advertisement, page 135, for the Baker Oil Tools All-Fiberglass Packer (attached as Exhibit 2), and/or U.S. Patent 4,708,202 to Sukup et al., either taken

Mr. Robert A. Kent
December 7, 2001
Page 3 of 4

separately or in combination. Sukup teaches that the drillability of downhole packers and bridge plugs can be enhanced by making the tools with non-metallic components, including components of the slip assembly. The Baker packers shown in the attached exhibits were completely manufactured with non-metallic components. Thus, each of the claimed inventions set forth in these claims was already known in the art and/or obvious to one of skill in the art before the filing date of the '468 patent.

Each of the remaining claims of the '468 patent require (1) drilling (as opposed to milling) the tool out of the wellbore; (2) the slips comprised of non-metallic material, and/or (3) the use of a polycrystalline diamond compact bit to drill out the downhole tool. The Python bridge plug uses conventional cast iron slips. Further, the Python bridge plug is removed by milling operations and not by drilling, especially by polycrystalline diamond compact bits. Halliburton clearly distinguished drilling from milling operations in the '468 patent. Consequently, Halliburton surrendered claim coverage for the removal of a wellbore tool by milling operations.

Like the '468 patent, the '540 patent is directed to a downhole device, such as a packer or a bridge plug, that is comprised of non-metallic components to facilitate drilling out the device. At least claims 1-5, 7, 14 and 18 of the '540 patent are either anticipated or obvious in view of the following devices or references, taken alone or in combination: (1) Baker Prime Fiberglass Packer, Product 739-09 from Baker Oil Tools, Inc.; (2) the June 1968 World Oil Advertisement, page 135, for the Baker Oil Tools All-Fiberglass Packer; (3) U.S. Patent 4,708,202 to Sukup et al.; (4) U.S. Patent 4,151,875 to Sullaway; and/or (5) the EZ Drill SV Packers described in the '540 patent. One of skill in the art would have known from these prior art devices and references that the drillability of downhole tools could be enhanced by using components made of non-metallic material. As evident from the above-identified prior art, each of the claimed inventions set forth in these claims was already known in the art and/or obvious to one of skill in the art prior to the filing date of the '540 patent.

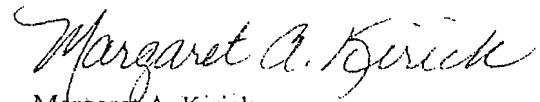
The remaining claims of the '540 patent require, among other things, that at least the slips be comprised of non-metallic material. As indicated above, the Python bridge plug uses conventional cast iron slips.

As indicated above, each of the valid claims of the Halliburton patents identified in your letter requires at least one limitation that is not met by the Python bridge plug. Since the absence of a single element negates infringement, there can be no infringement, either literally or under the doctrine of equivalents, of any of the valid claims of any of the above-referenced patents.

Mr. Robert A. Kent
December 7, 2001
Page 4 of 4

Please contact me if you have any questions regarding this matter.

Very truly yours,



Margaret A. Kirick
Chief Patent Counsel

cc: Margaret B. Shannon, General Counsel

400700200900000000

EXHIBIT 1

10 " Surface & Field
BAKER OIL TOOLS, INC.



SPECIAL PRODUCTS MANUAL

SUBJECT Baker Prime Fiberglass Packer
Product 739-09

INDEX 402-9010

T/B

190-990

DATE April 25, 1968

PURPOSE:

The primary application will be as an injection packer in wells using fiberglass tubing strings. The packer is constructed of epoxy-fiberglass laminates that possess not only strength, but also, are free from chemical attack. The Clips have crushed carbide bonded to the outer surface to enable them to bite into the casting, and the Drag Blocks have cobalt base inserts for wear resistance. Both materials are highly corrosion resistant. All packers have been manufactured and tested to temperatures, pressures, and tension in excess of the actual down-hole conditions to which they have been applied. The Size 43 and 45 Packers have been tested to 2000 psi with a 20,000 lb strain at 150° F. The Size 47 Packer has been tested to 600 psi with a 10,000 lb strain, and to a total tension pull of 20,000 lb at 150° F. However, these values may be extended as the applicable market for this packer increases. CONTACT PRODUCT ENGINEERING IF YOUR REQUIREMENTS EXCEED TEST RESULTS.

RUNNING:

The Fiberglass Packer is similar to a Model "A" Tension Packer, except for the Safety Release. Make up the tool to the tubing string using friction wrenches. If friction wrenches are not available, wrench on the box surface of the body and minimize wrench marking.

Run the tool to the desired setting depth, making sure the last motion is down. Rotate 1/4 turn to the left at the tool, and take a 3000 lb strain to pack off the 70-Hard Element of the Size 43 and 45 Packers; 9000 lb strain to pack off the 60-Hard Element of the Size 47 Packer.

RETRIEVING:

To release the tool, lower the tubing one foot and rotate 1/4 turn to the right to re-jay the Control Slip Unit. If it is necessary to use the emergency release, take a 1000 - 2000 lb strain and rotate to the right five turns at the tool. 150-20 ft/lb of torque is necessary to shear the Nylon Shear Screw(s) and rotate loose.

ASSEMBLY INSTRUCTIONS:

Slide the Control Slip Assembly onto the Body over the Cone Stop Ring. Insert the three J-Pins into the J-Pin Housing, align the drilled holes, insert the J-Pin Retainers, and Headless Brass Screws, and tighten. "Jay" the Control Slip Assembly onto the J-Slots of the Body. Make Safety Sub (applying Bakseal to threads) onto Body, align Shear Screw hole(s), insert Nylon Shear Screw(s), and tighten.

DISASSEMBLY:

Use friction wrenches, if available; otherwise, wrench only on the large O.O.'s of the Safety Sub (left hand thread), Packing Element, and Cone. Un-jay the Control Slip Assembly and move it down far enough to expose and remove the Headless Brass Screws and J-Pin Retainers, holding the three J-Pins to the Housing. Shake the J-Pins out and remove the Control-Slip Assembly. Clean parts in solvent only. Do not steam clean as this will remove dry lubricant coatings.

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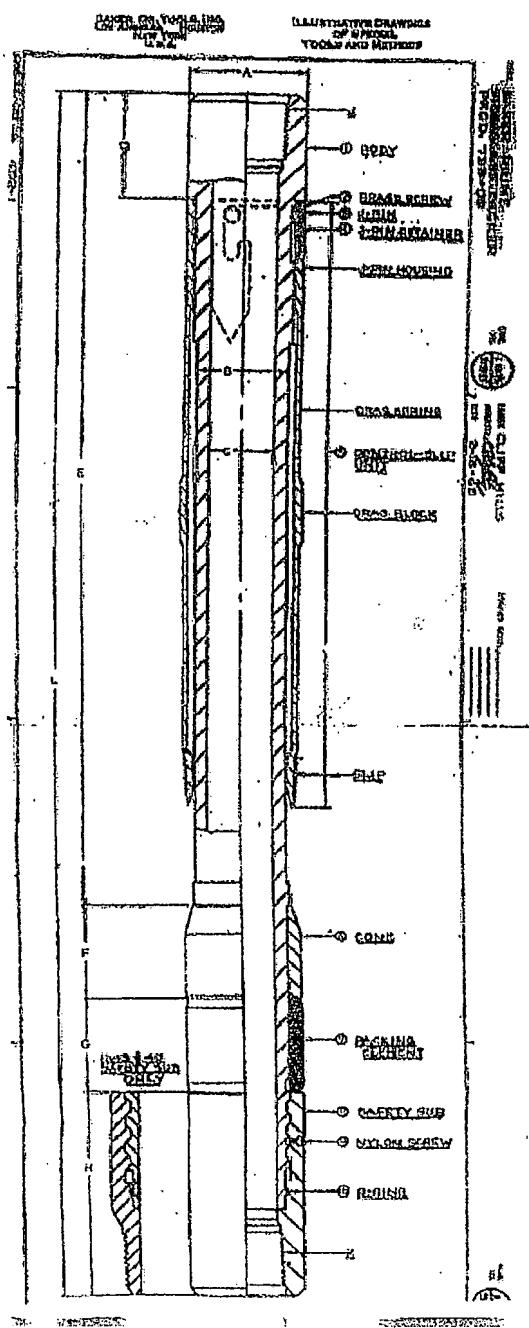


EXHIBIT 2

Is bad water
eating away your
flood profits?

Baker introduces
two packers as corrosion-proof
as fiberglass tubing—
because they are fiberglass!

Corrosive fluid problems? Baker fiberglass packers were the answer for one operator. He asked Baker to build several all-fiberglass packers. These were custom packers made entirely of fiberglass—and they performed beautifully.

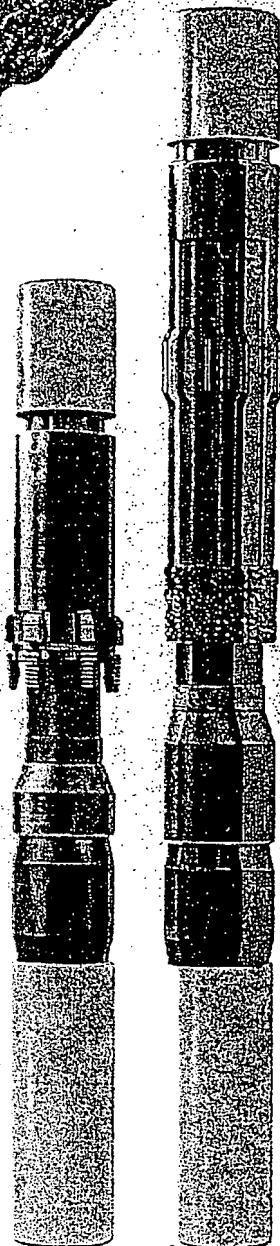
But many wells don't require the premium all-fiberglass construction. So a less expensive packer was developed that combines a fiberglass body and Kanigen-plated metal setting mechanism. For less money, it offers fiberglass protection wherever bad water contacts the packer. Saving just one round trip would more than pay for the difference in price between an ordinary packer and this economy fiberglass packer.

Do you have bad water problems that fiberglass packers can solve? Ask Baker to help you plan fiberglass in your next flood project. In 4½, 5½, and 7-inch sizes.



BAKER
FIBERGLASS PACKERS

BAKER OIL TOOLS INC. HOUSTON • LOS ANGELES • NEW YORK



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Weatherford®

RECEIVED

FEB 11 2002

ROBERT A. KENT
PATENT DEPARTMENT

February 6, 2002

Scott H. Brown
Weatherford International, Inc.
515 Post Oak Blvd., Suite 600
Houston, Texas 77027
(713) 693-4176 Direct Dial
(713) 693-4480 Fax
scott.brown@weatherford.com

Subject to Settlement Privilege

Mr. Robert A. Kent
Senior Counsel
Halliburton Law Department
2600 South Second Street
Duncan, OK 73536-0440

Re: Halliburton Composite Plug Patents

Dear Bob:

This letter is in response to your request for more information relating to the validity of Halliburton's composite plug patents. Unfortunately, I was not in the country and could not attend the meeting held at our Spencer Road facility on January 15th. Weatherford people have told me that they thought that the meeting went well. So, I am slightly surprised at the comment in your letter regarding our "good faith." We have spent considerable time and money to make sure of our position that we either do not come within the claims of the patents or the patents themselves are invalid. We have met with you and we have shown you our product. What we have not done is provide you with "chapter and verse" as to all of the prior art that we are relying on. We obtained this prior art after some effort. In prior dealings with Halliburton, when I was the requesting party, Halliburton took the same approach for the same reason, so we hope that you understand why we are not willing to divulge it.

What we are willing to disclose is that Prior Art B relates to a 2 3/8" composite plug with the following features:

- (a) a composite sub assembly threaded at the bottom of the mandrel.
- (b) an elastomeric seal that expands to the wellbore when the tool is set.
- (c) a brass shoe that is made of a plurality of segments. When the tool is set, these segments extend outwards.

14477.1

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515 Post Oak Blvd., Suite 600
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USA

713/693-1000 Main

www.weatherford.com

Mr. Robert A. Kent

February 6, 2002

Page 2

- (d) a composite shoe that is made of a plurality of segments. When the tool is set, these segments extend outwards. The segments of the composite shoe are offset when compared to the segments of the brass shoe.
- (e) a composite cone or wedge. This is held in its initial position by brass pins.
- (f) a sectioned composite set of double slips. The slips have hardened tungsten inserts. A spring wraps around the double slips to help maintain them in their initial position. The slips also have brass pins to help their initial position.
- (g) another cone, composite shoe and brass shoe that are in mirror image location compared with the corresponding components that are disposed around the mandrel below the slips.
- (h) a composite top ring that is used to transfer setting force to the components around the mandrel.

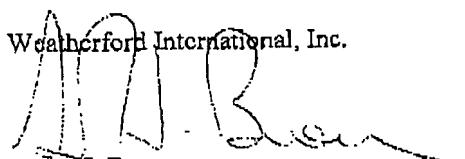
More than one example of the tool identified as Prior Art B was made in the 1980s, and at least one such tool was installed in the United States. None of the members of the operation team at the well site were under any obligations of confidentiality. Not all of the members of the team worked for the company that manufactured the tool.

Obviously, had the United States Patent and Trademark Office known of this prior art reference (not to mention the others that were presented to you in the same meeting), we would not be having these communications because the claims most likely would not have issued, and certainly would not have issued in their current form.

We hope this responds adequately to the questions raised in your letter. As always, we remain open to further dialogue between the parties.

Yours very truly,

Weatherford International, Inc.



Scott H. Brown
Intellectual Property Counsel

SHB/lk

14477.1

Halliburton

Law Department

2600 South Second Street (73536-0440) / Post Office Box 1431 / Duncan, OK 73536-0431

January 28, 2001

Mr. Scott Brown, Esquire
Weatherford International, Inc.
515 Post Oak Blvd, Suite 600
Houston, TX 77027

Re: Halliburton U.S. Patent Nos. 5,224,540; 5,271,468; 5,390,737;
5,540,279; 5,701,959; 5,839,515; 5,984,007; and 6,220,349

Dear Scott:

Thank you for meeting with Halliburton's representatives and me on December 3, 2001, and for allowing us to view Weatherford's composite bridge plug on January 15, 2002. However, our investigation is continuing.

At our meeting on December 3rd, Weatherford stated that it is relying on the opinion of its attorney, Gary Fischman. This opinion, however, relies upon certain information that Weatherford is withholding from Halliburton. In particular, Mr. Fischman's opinion cites "Prior Art B" and the declaration of a person, both of which Weatherford has refused to disclose.

We can only speculate as to the motivations for Weatherford's refusals to be forthcoming with any evidence it may have, but unless we see some progress in moving toward full disclosure, Weatherford's good faith will be called into question.

We request that Weatherford reconsider its actions and promptly provide all the information it has regarding Prior Art B.

Sincerely,



Robert A. Kent
Senior Counsel

CC: William Shull

Rich This is a test sending four self executing files relating to Weatherford. Let me know if you can not utilize files in this form. The files include: 1. correspondence, 2. Weatherford's product images, 3. Weatherfords invalidity-noninfringement presentation to Halliburton at a meeting on 12/3/01 (citing Prior Art A, B, and C), and 4. An image from 1968 World Oil showing Prior Art A and B. FYI-The alleged Prior Art B might be in reference to unpublished research at Western Co in the 1980's by Messrs Sukup and Harris (See: US patent 4,708,202 but '202 lacks composite mandrel and composite slips). John F. Booth Crutsinger & Booth 1950 Thanksgiving Tower Dallas, TX 75201-4744 Tel: 214-220-0444 Fax: 214-220-0445 e-mail: jbooth@ipoftexas.com **Confidential** The information in this e-mail message may be privileged, confidential, and protected from disclosure. If you are not the intended recipient, any dissemination, distribution or copying is strictly prohibited. If you think that you have received this e-mail message in error, please e-mail the sender and delete all copies. Thank you.

00002107-020604

September 10, 2001

Mr. Scott Brown, Esquire
Weatherford International, Inc.
515 Post Oak Blvd, Suite 600
Houston, TX 77027

Re: Halliburton U.S. Patent Nos. 5,224,540; 5,271,468;
5,390,737; 5,540,279; 5,701,959; 5,839,515; 5,984,007; and
6,220,349

Dear Mr. Brown:

It has come to the attention of Halliburton Energy Services, Inc. (Halliburton) that a division of Weatherford International, Inc. (Weatherford) may be commercializing a composite frac plug or bridge plug for use in subterranean wells. It is understood that 50 composite plugs may have been sold by Weatherford to Anadarko Petroleum Corporation in the Rocky Mountain area.

Please be advised that Halliburton owns U.S. Patent Nos. 5,224,540; 5,271,468; 5,390,737; 5,540,279; 5,701,959; 5,839,515; 5,984,007; and 6,220,349. A copy of each of the above patents is enclosed for your review.

Halliburton hereby requests Weatherford to immediately cease any activities that would infringe any of the claims of the above patents. We look forward to receiving your prompt assurance that any potentially infringing activities have ceased or your explanation of why the subject patents are not applicable to your activities.

Sincerely,

Robert A. Kent

Senior Counsel

Enclosures

Cc: Gary Godwin
Bert Cornelison
William Shull

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October 5, 2001

Mr. Robert A. Kent
Halliburton Energy Services
P.O. Box 1431
Duncan, OK 73536-0431

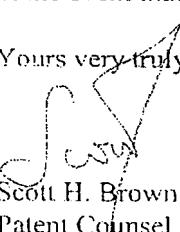
Re: Weatherford's Composite Bridge Plugs
Halliburton's US Patents 5,224,540; 5,271,468; 5,390,737;
5,540,279; 5,701,959; 5,839,515; 5,984,007 and
6,220,349

Dear Robert:

This letter is to formally respond to your letter of September 10th regarding Halliburton's patents for composite bridge plugs. Specifically, we asked the law firm of Howrey Simon Arnold & White to review the file histories of the above identified patents and to compare the issued claims to the Weatherford composite bridge plugs. Howrey has provided me with legal opinions that state that Weatherford's composite bridge plugs do not infringe any valid claims in these patents. Therefore, as far as Weatherford is concerned this is no longer an issue.

In the event that you would like to discuss this matter, please call or write me.

Yours very truly,


Scott H. Brown
Patent Counsel

SHB/lk

RECEIVED

OCT 10 2001

ROBERT A. KENT
PATENT DEPARTMENT

13257.1

at Sent

October 12, 2001

Mr. Scott Brown, Esquire
Weatherford International, Inc.
515 Post Oak Blvd, Suite 600
Houston, TX 77027

Re: Halliburton U.S. Patent Nos. 5,224,540; 5,271,468; 5,390,737;
5,540,279; 5,701,959; 5,839,515; 5,984,007; and 6,220,349

Dear Scott:

I wish to thank you for your letter of October 5, 2001, however, we consider your reply inadequate.

Weatherford has failed to provide any explanation or other justification for why its composite tools do not infringe the claims of Halliburton's patents. Your letter implies that Weatherford apparently believes that some of the claims of the patents may be invalid, however, you have failed to provide any identification of the prior art upon which you are relying. Weatherford also has failed to provide any information regarding what claim limitations, particularly with respect to any of the method claims, it believes are avoided by use of its tools.

We look forward to receiving your prompt explanation of why the subject patents are not applicable to Weatherford's activities.

Sincerely,

Robert A. Kent
Senior Counsel

Cc: Gary Godwin
Bert Cornelison
William Shull



Weatherford®

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OCT 26 2001

ROBERT A. KENT
PATENT DEPARTMENT
October 22, 2001

Scott H. Brown
Weatherford International, Inc.
515 Post Oak Blvd., Suite 600
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(713) 693-4176 Direct Dial
(713) 693-4480 Fax
Scott.Brown@Weatherford.com

Mr. Robert A. Kent
Halliburton Energy Services
P.O. Box 1431
Duncan, OK 73536-0341

Re: Halliburton's U.S. Patent Nos. 5,224,540; 5,271,468; 5,390,737; 5,540,279; 5,701,959;
5,839,515; 5,984,007 and 6,220,349

Dear Robert:

This letter will respond to your letter to me of October 12, 2001 concerning Weatherford's composite tools. As I mentioned in my previous letter to you, I commissioned outside counsel to review the claims of the patents you sent me. The results of their investigation - which I will discuss only in general terms due to privilege considerations - reveals that the Patent Office was not aware of noncumulative, material prior art that was highly relevant to Halliburton's patent applications. Specifically, more than one year before Halliburton applied for the earliest patent in the above referenced list, another company sold composite downhole tools and advertised them internationally. Further, another manufacturer actually used a composite downhole tool in commerce in the United States more than one year before Halliburton applied for any of the patents included on your list.

These sales, advertisements and public use involved downhole tools that included, among other things, composite slips (with various hardened inserts), composite mandrels, composite cones and composite segmented packer element retaining shoes. This prior art places virtually every claim in your earlier patents in jeopardy. CAFC rulings confirm that Halliburton had an affirmative duty to investigate these types of facts prior to filing these patent applications, but may not have done so. With respect to your later composite tool patents, we have not looked at these in depth because they deal with esoteric configurations that Weatherford has never seen before and certainly does not utilize.

13417.1

Mr. Robert A. Kent
October 22, 2001
Page 2

If Halliburton still wants to pursue this matter, then I will set up a meeting with our outside counsel and you to discuss what this prior art shows and why Weatherford does not infringe any valid claim of the above patents.

Very truly yours,



Scott H. Brown
Patent Counsel

SHB/lk

100-2007-10020006

13417.1

From: Robert Kent [Robert.Kent1@Halliburton.com]
Sent: Tuesday, November 20, 2001 12:19 PM
To: 'John Booth'; Robert Kent
Cc: William Shull
Subject: RE: Composite Bridge Plugs

Johnh,
I will send a letter Monday,
Bob

Robert A. Kent
Sr. Counsel
Halliburton Energy Services, Inc.
P.O. Box 1431
Duncan, OK 73536

telephone: 580-251-3125
fax: 580-251-3917
email: Robert.Kent1@Halliburton.com

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> -----Original Message-----
> From: John Booth [SMTP:jbooth@ipoftexas.com]
> Sent: Tuesday, November 20, 2001 11:09 AM
> To: 'Robert Kent'
> Cc: WILLIAM SHULL (E-mail)
> Subject: RE: Composite Bridge Plugs
>
> Bob
>
> I spoke with Bill this morning and Monday December 3 is fine for the
> Weatherford meeting. I suggest you confirm the meeting with a letter to
> Brown stating that Halliburton is coming to view the accused product and
> alleged relevant prior art.
>
> John Booth
>
>
>
> -----Original Message-----
> From: Robert Kent [mailto:Robert.Kent1@Halliburton.com]
> Sent: Tuesday, November 20, 2001 8:41 AM
> To: William Shull; 'John Booth'
> Subject: FW: Composite Bridge Plugs
>
>
>
> John/Bill,
>
> Is this date still ok for you????

> Please let me know.
> Bob
>
>
> Robert A. Kent
> Sr. Counsel
> Halliburton Energy Services, Inc.
> P.O. Box 1431
> Duncan, OK 73536
>
> telephone: 580-251-3125
> fax: 580-251-3917
> email: Robert.Kent1@Halliburton.com
>
> This email, including any attached files, may contain confidential and
> privileged information for the sole use of the intended recipient(s). Any
> review, use, distribution or disclosure by others is strictly prohibited.
> If you are not the intended recipient (or authorized to receive
> information
> for the recipient), please contact the sender by reply email and delete
> all
> copies of this message. Thank you

> > -----Original Message-----

> > From: Brown, Scott [SMTP:scott.brown@weatherford.com]
> > Sent: Monday, November 19, 2001 3:24 PM
> > To: 'robert.kent1@halliburton.com'
> > Cc: Jordan, Joe; Lembcke, Jeff; 'fischmang@howrey.com'
> > Subject: Composite Bridge Plugs
> >
> > Robert:
> >
> > We are available to meet at 9:00am on December 3 at my office. Does this
> > work for you?
> >
> > My office is located at the Weatherford building, 515 Post Oak Blvd.,
> > Suite
> > 600, Houston, Texas 77027. It's just east of the Loop 610 on Post Oak
> > Blvd., and just north of San Felipe (near the Galleria).
> >
> > Regards,
> >
> > Scott
> > / Scott H. Brown
> > Patent Counsel
> > Weatherford International, Inc.
> > 515 Post Oak Blvd., Suite 600
> > Houston, Texas 77027
> > ph 713-693-4176
> > fx 713-693-4480
> >
>

From: Robert Kent [Robert.Kent1@Halliburton.com]
Sent: Monday, November 26, 2001 11:12 AM
To: 'Brown, Scott'
Cc: William Shull
Subject: RE: Composite Bridge Plugs

Scott,
Thank you for your response to my letter of November 7, 2001. This email is to confirm that we will meet with you on December 3, 2001 at 9:00 am at your office at 515 Post Oak Blvd., Houston, TX, to view the accused product and alleged relevant prior art.

Regards,
Robert Kent

Robert A. Kent
Sr. Counsel
Halliburton Energy Services, Inc.
P.O. Box 1431
Duncan, OK 73536

telephone: 580-251-3125
fax: 580-251-3917
email: Robert.Kent1@Halliburton.com

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If you are not the intended recipient (or authorized to receive information for the recipient), please contact the sender by reply email and delete all copies of this message. Thank you

> -----Original Message-----
> From: Brown, Scott [SMTP:scott.brown@weatherford.com]
> Sent: Monday, November 19, 2001 3:24 PM
> To: 'robert.kent1@halliburton.com'
> Cc: Jordan, Joe; Lembcke, Jeff; 'fischmang@howrey.com'
> Subject: Composite Bridge Plugs
>
> Robert:
>
> We are available to meet at 9:00am on December 3 at my office. Does this
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> Suite
> 600, Houston, Texas 77027. It's just east of the Loop 610 on Post Oak
> Blvd., and just north of San Felipe (near the Galleria).
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> Regards,
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> Scott
> / Scott H. Brown
> Patent Counsel
> Weatherford International, Inc.
> 515 Post Oak Blvd., Suite 600

> Houston, Texas 77027
> ph 713-693-4176
> fx 713-693-4480
>

90027-02602-02000

John Booth

From: Robert Kent [Robert.Kent1@Halliburton.com]
Sent: Friday, November 30, 2001 11:32 AM
To: 'John Booth'
Subject: FW: Weatherford Composite Info

Robert A. Kent
Sr. Counsel
Halliburton Energy Services, Inc.
P.O. Box 1431
Duncan, OK 73536

telephone: 580-251-3125
fax: 580-251-3917
email: Robert.Kent1@Halliburton.com

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>-----Original Message-----
> From: Jay Burris
> Sent: Thursday, October 25, 2001 10:53 AM
> To: Doug Quinn
> CC: Robert Kent
> Subject: RE: Weatherford Composite Info
>
> Thanks Doug,
> We have put Weatherford on notice about patent infringements. Please make
> sure we track (if possible), the number of jobs they run as we will want
> to know this if they continue to run their tools knowing they infringe on
> our patents...
> Jay
>
>-----Original Message-----
> From: Doug Quinn
> Sent: Thursday, October 25, 2001 8:54 AM
> To: Don Folds; Jay Burris; Derek Glassey; Byron Squyres
> Subject: Weatherford Composite Info
>
> FYI.....Weatherford has hit some of our other Customers and are
> offering the first one for free. One of our FSR's told me the other day
> that he seen one of their plugs. The main difference he noticed was the
> slips, instead of an outer band that holds the slips together, they were
> contained within.
>
> Doug Quinn
> Business Segment Manager
> CPS / TTCP
> Office #1 - 405-231-1848
> Office #2 - 580-251-2891
> Cell # - 405-850-5824
>
>-----Original Message-----
> From: Alfred Nye
> Sent: Wednesday, October 24, 2001 5:15 PM
> To: Don Garrett; Rodney Mckone; Doug Quinn; Randy Bell; Bruce Lillard;
> Larry Grant; Harold Reardon; Danny Martin; Mitheal Riley; Bill Boykin;

> Ricky Graves
> Subject:
>
> Men, I visited with Samson Resources today about the fas drill frac plug
> for the Newton Smith well in Pittsburg County . The engineer said he was
> going to run Weatherford with the 4-1/2" 8K. He said they priced it at
> \$4,500.00. He said he is going to let us have the 5-1/2" 8K frac plug for
> their Ward lease in Pittsburg. He said the frac date is Nov 7th. Our
> price is \$5,200.00 for the 8K frac plug. I just wanted to let you know
> where their price range is on the tools. I talked with Doug Armstrong in
> Rock Springs this morning and he told me about the same thing on the
> prices up there. He also said Weatherford had run several of these tools
> and was having good results in performance and drilling time. This is
> something we need to keep pay close attention to. If anyone has any
> information on these tools, lets get the word out and keep us informed.
> Thanks
> Al Nye
> Technical Advisor
> 601 S. Boulder, Ste 300
> Tulsa, Okla. 74119
> Office Telephone # 918-587-3117
> Direct Telephone # 918-581-5208
> Home Telephone # 918-243-7412
> Cell # 918-760-5143
> Fax # 918-585-5143
> E- Mail: alfred.nye@halliburton.com
>

00000000000000000000000000000000



Weatherford[®]

Completion Systems

FracGuardTM Series Composite Bridge Plug (BP8 and BP10)

The Weatherford FracGuardTM Composite Bridge Plug provides a means to temporarily plug a well or to isolate zones during high pressure stimulation. The composite body and component construction allow for rapid drill up using common workover type bits. The lightweight cuttings produced lift easily and do not pile up on plugs below in multiple plug applications.

The Weatherford FracGuardTM Composite Bridge Plugs are available in standard and High Pressure / High Temperature (HP/HT) versions. The **BP8** standard bridge plug is rated to 8,000 psi differential pressure from above up to 250°F and the **BP10** HP/HT version is rated to 10,000 psi differential pressure from above at 350°F.

Both the Standard and the HP/HT Bridge Plugs may be run on tubing, drill pipe, coiled tubing, or on wireline using conventional bridge plug setting equipment.

Applications:

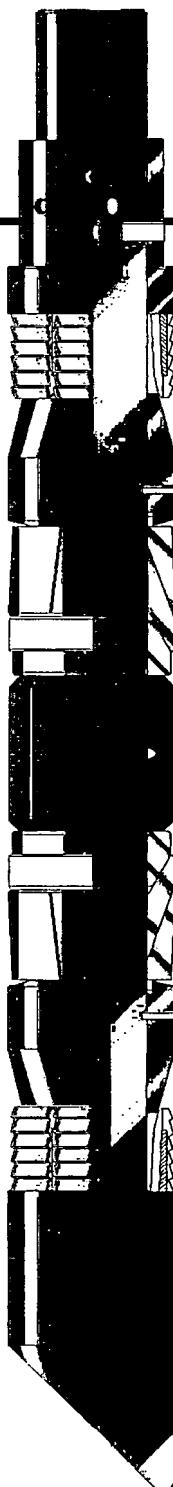
- Single or multiple zone stimulation
- Vertical, deviated, horizontal or multilateral wellbores
- Temporary well plugging
- Underbalanced, multiple zone completions

Features:

- Holds full differential pressure from above and below
- Multiple plugs may be run to isolate a series of zones
- Allows underbalanced drill out of multiple plugs which protects sensitive formations
- Drills out quickly with conventional tri-cone or junk-mill bits which saves time
- Beveled bottom prevents body from spinning which speeds drill up times
- Lightweight cuttings lift easily and minimize plugging of surface equipment

Specification Guide:

CASING				BRIDGE PLUG		
O.D. in/mm	Weight lb./ft.	Min. I.D. in/mm	Max. I.D. in/mm	Max. O.D. in/mm	Temperature Rating, °F	Pressure Rating, psi
4-1/2 114.30	9.5 - 13.5	3.920 99.57	4.090 103.89	3.660 92.96	250	8,000
	15.1 - 16.6	3.754 95.35	3.826 97.18	3.595 91.29	250	8,000
5-1/2 139.70	15.5 - 23.0	4.670 118.62	4.950 125.73	4.370 111.00	250	8,000





FracGuard™ Series Composite Frac Plug (FP8 and FP10)

The Weatherford FracGuard™ Composite Frac Plug provides a means isolate a lower zone from an upper zone undergoing a high pressure stimulation. The integral check ball holds differential pressure from above but allows flow back from below the plug.

The Weatherford FracGuard™ Composite Frac Plugs are available in standard and High Pressure / High Temperature (HP/HT) versions. The **FP8** standard bridge plug is rated to 8,000 psi differential pressure from above up to 250°F and the **FP10** HP/HT version is rated to 10,000 psi differential pressure from above at 350°F.

Both the Standard and the HP/HT Frac Plugs can be run on tubing, drill pipe, coiled tubing, or on wireline using conventional bridge plug setting equipment.

Applications:

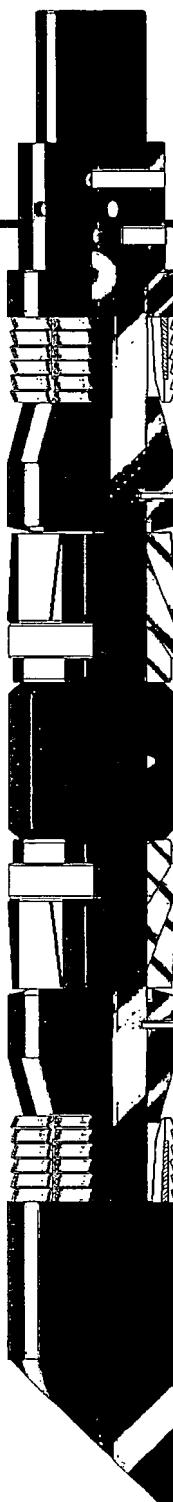
- Single or multiple zone stimulation
- Vertical, deviated, horizontal or multilateral wellbores
- Underbalanced, multiple zone completions

Features:

- Holds full differential pressure from above and allows flow through the mandrel from below
- Multiple plugs may be run to isolate a series of zones
- Drills out quickly with conventional tri-cone or junk-mill bits which saves time
- Beveled bottom prevents body from spinning which speeds drill up times
- Lightweight cuttings lift easily and minimize plugging of surface equipment
- Ball is pinned in place in the plug to eliminate possible seating problems associated with floating balls

Specification Guide:

CASING				BRIDGE PLUG		
O.D. in/mm	Weight lb./ft.	Min. I.D. in/mm	Max. I.D. in/mm	Max. O.D. in/mm	Temperature Rating, °F	Pressure Rating, psi
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- Single or multiple zone stimulation
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The Weatherford FracGuard™ Composite Bridge Plugs are available in standard and High Pressure / High Temperature (HP/HT) versions. The **BP8** standard bridge plug is rated to 8,000 psi differential pressure from above up to 250°F and the **BP10** HP/HT version is rated to 10,000 psi differential pressure from above at 350°F.

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- Single or multiple zone stimulation
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- Holds full differential pressure from above and below
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- Allows underbalanced drill out of multiple plugs which protects sensitive formations
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5-1/2 139.70	15.5 - 23.0	4.670 118.62	4.950 125.73	4.370 111.00	250	8,000

**Meeting With Halliburton
Concerning Halliburton's
Composite Downhole Tool
Patents**

December 3, 2001

**Subject to Settlement Privilege
Fed. R. Evid. 408**

Subject to Settlement Privilege

1

Halliburton Brought Eight Patents to Weatherford's Attention:

- U.S. Patent No. 5,224,540
- U.S. Patent No. 5,271,468
- U.S. Patent No. 5,390,737
- U.S. Patent No. 5,540,279
- U.S. Patent No. 5,701,959
- U.S. Patent No. 5,839,515
- U.S. Patent No. 5,984,007
- U.S. Patent No. 6,220,349

Conclusion: Weatherford's downhole tools do not infringe any valid claim of any of the above patents.

00007307-0700

The Presumption of Validity Under 35 U.S.C. § 282 Cannot be Maintained for the Claims of at Least Three Patents:

**The Patent Office Did Not Know Of Three
Prior Art References that Were Material
to the Claims of at Least Three of the Patents:**

**U.S. Patent No. 5,224,540
U.S. Patent No. 5,271,468
U.S. Patent No. 5,540,279**

Under 35 U.S.C. § 102, a person is not entitled to a patent if the invention was in public use or on sale in this country more than one year prior to the filing date for the application in the U.S. Under 35 U.S.C. § 103, a person is not entitled to a patent if the differences between the prior art and the subject matter sought to be patented would have been obvious to a person of ordinary skill in the art.

**The earliest priority date for any of the above patents was April 26, 1990.
Each of the three prior art references was on sale and/or in public use
in the United States more than one year before that date.**

Prior Art "A" was on sale in the U.S. more than one year before April 26, 1990 and was promoted in the United States in a trade journal. It included:

- composite mandrel
- composite slips with hardened inserts
- composite cone or "wedge"
- elastomeric packing element

No prior art made of record by the examiner included all these features

Prior Art "B." According to a declaration by the inventor, Prior Art "B" was in public use in the U.S. more than one year before April 26, 1990. It included:

- composite mandrel
- composite slips with hardened inserts
- elastomeric packing element
- composite cone or "wedge"
- composite packer element retaining shoe comprised of segments that extend to the wellbore when the tool is set

No prior art made of record by the examiner included all these features

**Prior Art "C" was on sale in the U.S. more than one year before April 26, 1990 and was promoted in the United States in a trade journal.
It included:**

- composite mandrel
- elastomeric packing element
- metallic slips

No prior art made of record by the examiner included all these features

United States Patent [19]
Streich et al.

[11] **Patent Number:** 5,224,540
[45] **Date of Patent:** Jul. 6, 1993

[54] DOWNHOLE TOOL APPARATUS WITH
NON-METALLIC COMPONENTS AND
METHODS OF DRILLING THEREOF

Key Claim Limitations

	Disclosed In:	
	A	B
• composite slips	✓	✓
• hardened inserts for slips	✓	✓
• packing means	✓	✓
• composite cone or "wedge"	✓	✓

United States Patent [19]

Streich et al.

Patent Number: 5,271,468

Date of Patent: Dec. 21, 1993

[54] **DOWNHOLE TOOL APPARATUS WITH
NON-METALLIC COMPONENTS AND
METHODS OF DRILLING THEREOF**

Key Claim Limitations:

	Disclosed In:		
	A	B	C
• composite mandrel	✓	✓	✓
• composite slips	✓	✓	
• hardened inserts for slips	✓	✓	
• packing means	✓	✓	✓
• composite cone or "wedge"	✓	✓	

60007402-020000

United States Patent [19] **Patent Number:** 5,540,279
Branch et al. **Date of Patent:** Jul. 30, 1996

[54] DOWNHOLE TOOL APPARATUS WITH
NON-METALLIC PACKER ELEMENT
RETAINING SHOES

405040 "200006

Key Claim Limitations:

	Disclosed In:		
	A	B	C
• composite mandrel	✓	✓	✓
• composite slips	✓	✓	
• packing means	✓	✓	✓
• segmented composite packer retaining shoe			✓
• composite cone or "wedge"	✓	✓	

The Claims of the Remaining Five Patents Contain Limitations Totally Absent From Anything Contemplated by Weatherford:

There can be no infringement as a matter of law when a claim limitation is totally missing from the accused device.

General Am. Transp. Corp. v. Cryo-Trans, Inc., 93 F.3d 766, 771 (Fed. Cir. 1996)

United States Patent [19]
Jacobi et al.

[11] Patent Number: 5,390,737
[45] Date of Patent: Feb. 21, 1995

[54] DOWNHOLE TOOL WITH SLIDING VALVE

Key Claim Limitations

Used or Contemplated for Use by Weatherford?

- molded mandrel with molded central opening NO
 - mandrel port NO
 - sliding valve on mandrel NO

United States Patent [19]

Hushbeck et al.

[11] Patent Number: 5,701,959

[45] Date of Patent: Dec. 30, 1997

**[54] DOWNHOLE TOOL APPARATUS AND
METHOD OF LIMITING PACKING ELEMENT
EXTRUSION**

Key Claim Limitation:

- Cavities in packer element
retaining shoe segments

**Used or
Contemplated
for Use by
Weatherford?**

NO

United States Patent [19]

Yuan et al.

[11] **Patent Number:** **5,839,515**

[45] **Date of Patent:** **Nov. 24,1998**

[54] **SLIP RETAINING SYSTEM FOR
DOWNHOLE TOOLS**

Key Claim Limitations:

**Used or
Contemplated
for Use by
Weatherford?**

- **groove in outer surfaces of slip segments**
- **frangible retaining member in groove**
- **elastic member in groove**

NO
NO
NO

United States Patent [19]
Yuan

[11] **Patent Number:** **5,984,007**
[45] **Date of Patent:** **Nov. 16, 1999**

[54] **CHIP RESISTANT BUTTONS FOR
DOWNHOLE TOOLS HAVING SLIP
ELEMENTS**

Key Claim Limitation:

- **Slips have slip buttons made of material comprising a titanium compound**

**Used by or
Contemplated
for Use by
Weatherford?**

NO

United States Patent [19]

Vargus

[11] **Patent Number:** 6,220,349 B1

[45] **Date of Patent:** Apr. 24, 2001

[54] **LOW PRESSURE, HIGH TEMPERATURE
COMPOSITE BRIDGE PLUG**

Key Claim Limitations:

- ratchet body on mandrel defining
a ratchet cavity
- ratchet disposed in the ratchet cavity

**Used or
Contemplated
for Use by
Weatherford?**

NO

NO

Conclusions:

- Weatherford does not infringe any valid claim of any of the eight patents submitted by Halliburton.
- Weatherford knows of prior art that would jeopardize the validity of several of Halliburton's patents.

JUNE
1968

World Oil

EXPLORATION • DRILLING • PRODUCTION

DRILLING PRODUCTION REPORT FROM



DISTRICT MEETINGS

Weatherford
Identified this as
showing Prior Art
A and C

How to get better liner jobs

Drilling the deep Wilcox

New lost circulation cure

Completing corroding wells

Predict abnormal pressure

Impulsive cementing success

Plastize dirty sands

Formation evaluation trends	97
Gas and oil in politics	15
Michigan's hottest lease play	87
Cabinda production to begin	111

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ON

Rich-We are
getting a better
copy

Is bad water
eating away your
flood profits?

Prior Art
A

Prior art
C

Baker introduces
**two packers as corrosion-proof
as fiberglass tubing —
because they are fiberglass!**

Corrosive fluid problems? Baker fiberglass packers were the answer for one operator. He asked Baker to build several all-fiberglass packers. These were custom packers made entirely of fiberglass—and they performed beautifully.

But many wells don't require the premium all-fiberglass construction. So a less expensive packer was developed that combines a fiberglass body and Kanigen-plated metal setting mechanism. For less money, it offers fiberglass protection wherever bad water contacts the packer. Saving just one round trip would more than pay for the difference in price between an ordinary packer and this economy fiberglass packer.

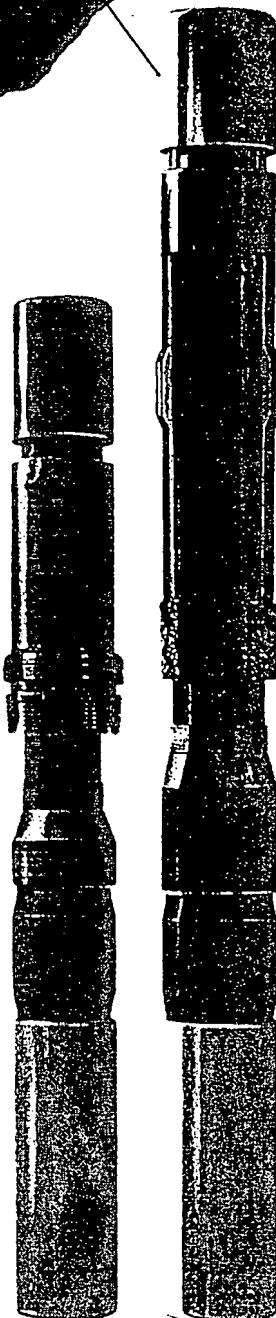
Do you have bad water problems that fiberglass packers can solve? Ask Baker to help you plan fiberglass in your next flood project. In 4½, 5½, and 7-inch sizes.



BAKER
FIBERGLASS PACKERS

BAKER OIL TOOLS INC. HOUSTON - LOS ANGELES - NEW YORK

E 1968



Exhibit

40007102-02009040

Appeal No. 04-1018

**UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT**

**HALLIBURTON ENERGY SERVICES, INC.
Plaintiff-Appellant,**

v.

**WEATHERFORD INTERNATIONAL, INC.
Defendant-Appellee,**

and

**BJ SERVICES COMPANY
Defendant-Appellee.**

Appeal from the United States District Court
For the Northern District of Texas in Case No. 02-CV-01347,
Judge David C. Godbey

BRIEF FOR APPELLEE

William C. Slusser
-Jayme Partridge
Jayne Piana
Slusser Wilson & Partridge LLP
333 Clay Street, Suite 4720
Houston, Texas 77002
Attorneys for Defendant-Appellee
BJ Services Company

February 10, 2004

UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT
HALLIBURTON ENERGY V. WEATHERFORD

04-1018

CERTIFICATE OF INTEREST

Counsel for Appellee BJ Services Company certifies the following:

1. The full name of every party or amicus represented by me is:

BJ Services Company

2. The name of the real party in interest (if the party named in the caption is not the real party in interest) represented by me is:

NA

3. All parent corporations and any publicly held companies that own 10 percent or more of the stock of the party or amicus curiae represented by me are:

N/A

4. There is no such corporation as listed in paragraph 3

N/A

5. The names of all law firms and the partners or associates that appeared for the party or amicus now represented by me in the trial court or agency or are expected to appear in this court are:

SLUSSER WILSON & PARTRIDGE LLP

WILSON & PARTNERS
William C. Slusser

Jayme Partridge

Jayne Piana

Jayne P. Ranta
Michael Wilson

Michael Wilson

McKOOL SMITH, P.C.
Philip N. Smith, Jr.
Theodore Stevenson, III
Lewis T. LeClair

HOWREY SIMON ARNOLD & WHITE LLP
J. Dean Lechtenberger
Floyd Nation
Gregg A. Duffey

Date: February 10, 2004

William C. Slusser

William C. Slusser
SLUSSER WILSON & PARTRIDGE LLP
333 Clay Street, Ste. 4720
Houston, Texas 77002
(713) 860-3300
(713) 860-3333 Facsimile

*Counsel for Defendant-Appellee BJ Services
Company*

2004 FEB 10 PM 10:00 AM 2004

Table of Contents

STATEMENT OF RELATED CASES	1
STATEMENT OF ISSUES	1
STATEMENT OF THE CASE	1
I. Preliminary Statement	1
STATEMENT OF FACTS	4
I. Background of Downhole Tools	4
II. The Asserted Claims	7
III. Overview of Prior Art References	10
A. The Fisher Patent	10
B. The Baker References	13
1. The 1968 Baker Special Products Manual	13
2. The 1968 Baker Advertisement	15
C. The Sullaway Patent	17
D. The Sukup Patent	19
E. The Muse Patent	21
IV. Halliburton's Claimed Invention Is Not New	22
A. There Is Nothing New About The Structural Limitations	22
B. There Is Nothing New About The Material Composition Limitation	24
C. There Is Nothing New About The Positioning Limitation	24
D. There Is Nothing New About The Removal Limitation	25
SUMMARY OF ARGUMENT	25

F05040 - 20140006

ARGUMENT	27
I. Legal Standards	27
A. Preliminary Injunction Law	27
B. The District Court Was Entitled to Rely Upon A Tentative Claim Construction	29
C. Standard of Review	30
D. Scope Of Appeal is Limited to The District Court's Finding of Substantial Question of Invalidity	31
II. The District Court's Tentative Claim Construction	32
A. The Law of Claim Construction	32
1. Presumption of Ordinary Meaning	32
2. Construction of Means-Plus-Function Limitation	33
B. The District Court's Construction of "Slip Means"	34
1. Construction of "Slip Means"	35
2. Halliburton's Construction Of "Slip Means" Is Wrong	38
C. The District Court's Construction of "Packing Means"	40
1. Construction of "Packing Means"	40
D. The District Court's Construction of "Disposed On"	42
1. Construction of "Disposed On"	42
2. Halliburton's Construction of "Disposed On" Is Wrong	44
E. The District Court's Construction Of "Locking, Sealing Engagement"	45
1. Construction of "Locking Engagement"	45
2. Construction of "Sealing Engagement"	46
3. Halliburton's Construction Of "Locking, Sealing Engagement" Is Wrong	47

THOMAS & THOMAS

III.	The District Court Did Not Abuse Its Discretion In Finding a Substantial Question Of Invalidity	49
A.	The Asserted Claims	50
1.	Claim 1	50
2.	Claim 30	50
3.	Claim 3	51
B.	Appellees Raised a Substantial Question Regarding Anticipation of the Asserted Claims	51
1.	Legal Standard for Anticipation	51
2.	Fisher Raises a Substantial Question of Anticipation For All of the Asserted Claims	52
a.	Claim 1	52
b.	Claim 30	54
c.	Claim 3	54
3.	Halliburton Mischaracterizes Fisher	56
4.	Baker Raises a Substantial Question of Anticipation Regarding Claim 30	57
C.	Appellees Raised a Substantial Question Regarding the Obviousness of the Asserted Claims	58
1.	Legal Standard for Invalidating Claims For Obviousness	58
2.	Baker Combined with Other Prior Art Raises a Substantial Question of Obviousness Regarding Claims 1 and 3	59
a.	Claim 1	60
b.	Claim 3	62
3.	Halliburton Mischaracterizes Baker	63
4.	Secondary Considerations Of Obviousness	64
IV.	Other Issues Not Addressed by District Court	66
A.	BJ's Tool Does Not Infringe	66
B.	Halliburton Has Not Been Irreparably Harmed	66
C.	The Balance of Harm Weighs In Favor Of BJ	67
D.	The Public Interest Favors BJ	68

Table of Authorities

Cases

<i>Am. Hoist & Derrick Co. v. Sowa & Sons, Inc.,</i> 725 F.2d 1350 (Fed. Cir. 1984)	49
<i>Amazon.com, Inc. v. Barnesandnoble.com, Inc.,</i> 239 F.3d 1343 (Fed. Cir. 2001)	29, 57, 58, 64
<i>Applied Materials, Inc. v. Advanced Semiconductor Materials Am., Inc.,</i> 98 F.3d 1563 (Fed. Cir. 1996)	49
<i>Asyst Techs. Inc. v. Empak, Inc.,</i> 268 F.3d 1364 (Fed. Cir. 2001)	37-39
<i>Black & Decker, Inc. v. Hoover Service Center,</i> 886 F.2d 1285 (Fed. Cir. 1989)	32
<i>Cardiac Pacemakers, Inc. v. St. Jude Med., Inc.,</i> 296 F.3d 1106 (Fed. Cir. 2002)	33, 35, 38
<i>Caterpillar Inc. v. Deere & Co.,</i> 224 F.3d 1374 (Fed. Cir. 2000)	33, 36
<i>CCS Fitness, Inc. v. Brunswick Corp.,</i> 288 F.3d 1359 (Fed. Cir. 2002)	33
<i>Cochrane v. Deener,</i> 94 U.S. 780 (1877)	47
<i>Diamond Int'l Corp. v. Maryland Fresh Eggs, Inc.,</i> 523 F.2d 113 (4th Cir. 1975)	52
<i>Frank B. Killian & Co. v. Allied Latex Corp.,</i> 188 F.2d 941 (2d Cir. 1951)	52

<i>Fromson v. W. Litho Plate & Supply Co.,</i> 853 F.2d 1568 (Fed. Cir. 1988)	31, 65
<i>Graham v. John Deere Co.,</i> 383 U.S. 1 (1966)	58
<i>Helifix Ltd. v. Blok Lok, Ltd.,</i> 208 F.3d 1339 (Fed. Cir. 2000)	49
<i>Hybritech Inc. v. Abbott Labs,</i> 849 F.2d 1446 (Fed. Cir. 1988)	27
<i>Illinois Tool Works, Inc. v. Grip Pak, Inc.,</i> 906 F.2d 679 (Fed. Cir. 1990)	67, 68
<i>IMS Tech., Inc. v. Haas Automation, Inc.,</i> 206 F.3d 1422, (Fed. Cir. 2000)	33
<i>In re Hayes Microcomputer Prods., Inc., Pat. Litig.,</i> 766 F. Supp. 818 (N.D. Cal. 1991)	68
<i>In re Lundberg,</i> 244 F.2d 543 (CCPA 1957)	38
<i>In re Sasse,</i> 629 F.2d 675(CCPA 1980).	56
<i>Intel Corp. v. ULSI Sys. Tech., Inc.,</i> 995 F.2d 1566 (Fed. Cir. 1993)	27
<i>Interactive Gift Express, Inc. v. Compuserve, Inc.,</i> 256 F.3d 1323 (Fed. Cir. 2001)	38
<i>Int'l Communication Materials v. Ricoh Co.,</i> 108 F.3d 316 (Fed. Cir. 1997)	30

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<i>Jack Guttman, Inc. v. Kopykake Enter., Inc.,</i> 302 F.3d 1352 (Fed. Cir. 2002)	28, 29, 31, 32, 66
<i>Johns Hopkins Univ. v. CellPro, Inc.,</i> 152 F.3d 1342 (Fed. Cir. 1998)	58
<i>Karsten Mfg. Corp. v. Cleveland Golf Co.,</i> 242 F.3d 1376 (Fed. Cir. 2001)	59
<i>Kegel Co., Inc. v. AMF Bowling, Inc.,</i> 127 F.3d 1420 (Fed. Cir. 1997)	52, 54, 58
<i>Minnesota Mining & Mfg. Co. v. Johnson & Johnson Orthopaedics, Inc.,</i> 976 F.2d 1559 (Fed. Cir. 1992)	51
<i>Motorola, Inc. v. Interdigital Tech. Corp.,</i> 121 F.3d 1461 (Fed. Cir. 1997)	59
<i>National Steel Car, Ltd. v. Canadian Pacific Railway, Ltd.,</i> No. 03-1256, 2004 WL 190257 (Fed. Cir. Jan. 29, 2004)	30, 50
<i>Newell Cos. v. Kenney Mfg. Co.,</i> 864 F.2d 757 (Fed. Cir. 1988)	65
<i>Nutrition 21 v. United States,</i> 930 F.2d 867 (Fed. Cir. 1991)	67
<i>Odetics, Inc. v. Storage Tech. Corp.,</i> 185 F.3d 1259 (Fed. Cir. 1999)	34
<i>Polymer Techs., Inc. v. Bridwell,</i> 103 F.3d 970 (Fed. Cir. 1996)	28
<i>Purdue Pharma L.P. v. Boehringer Ingelheim GmbH,</i> 237 F.3d 1359 (Fed. Cir. 2001)	28

四庫全書

<i>Reebok Int'l, Ltd. v. J. Baker, Inc.,</i> 32 F.3d 1552 (Fed. Cir. 1994)	28, 31
<i>Rheox, Inc. v. Entact, Inc.,</i> 276 F.3d 1319 (Fed. Cir. 2002)	42
<i>Ryko Mfg. Co. v. Nu-Star, Inc.,</i> 950 F.2d 714 (Fed. Cir. 1991)	64
<i>Schwing GmbH v. Putzmeister Aktiengesellschaft,</i> 305 F.3d 1318 (Fed. Cir. 2002)	63
<i>Smith Int'l, Inc. v. Hughes Tool Co.,</i> 718 F.2d 1573 (Fed. Cir. 1983)	31
<i>Southwall Techs., Inc. v. Cardinal IG Co.,</i> 54 F.3d 1570 (Fed. Cir. 1995)	43
<i>T. J. Smith & Nephew Ltd. v. Consolidated Med. Equip.,</i> 821 F.2d 646 (Fed. Cir. 1987)	67
<i>Tate Access Floors v. Interface Architectural Resources, Inc.,</i> 279 F.3d 1357 (Fed. Cir. 2002)	28
<i>Texas Digital Sys, Inc. V. Telegenix, Inc.,</i> 308 F.3d 1193 (Fed. Cir. 2002)	44-46
<i>Titanium Metals Corp. of Am. v. Banner,</i> 778 F.2d 778 (Fed. Cir. 1985)	49
<i>Voice Techs. Gp., Inc. v. VMC Sys., Inc.,</i> 164 F.3d 605 (Fed. Cir. 1999)	21
<i>Vulcan Eng'g Co., Inc. v. FATA Aluminum, Inc.,</i> 278 F.3d 1366 (Fed. Cir. 2002)	44

Rules and Statutes

35 U.S.C. § 102	49, 51
35 U.S.C. § 103	49, 58
35 U.S.C. § 112	33, 36, 41

Other

THE AMERICAN HERITAGE DICTIONARY	37, 43
WEBSTER'S NINTH NEW COLLEGIATE DICTIONARY	45, 46

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STATEMENT OF RELATED CASES

No other appeal in or from this action was previously before any appellate court. No other case known to counsel as pending in any court will be directly affected by this Court's decision in the pending appeal.

STATEMENT OF ISSUES

1. Whether the district court abused its discretion in denying Plaintiff-Appellant Halliburton Energy Services' ("Halliburton") motion for preliminary injunction by concluding that the Defendants-Appellees, BJ Services Company ("BJ") and Weatherford International, Inc., had presented a substantial question of invalidity of claims 1 and 30 of U.S. Patent No. 5,271,468 ("the '468 patent") and claim 3 of U.S. Patent No. 5,224,540 ("the '540 patent").

STATEMENT OF THE CASE

I. Preliminary Statement

The district court did not abuse its discretion in denying Halliburton's request for preliminary injunction because Appellees raised a substantial question of invalidity of the asserted claims of the patents-in-suit.

There is nothing new or novel about Halliburton's broadly claimed invention. Indeed, it is undisputed that structures and configurations of the downhole tools covered by Halliburton's asserted claims, including those of the "slip means" and

“packing means,” are identical to the structures and configurations of prior art tools used long before Halliburton’s patents-in-suit were filed.

There also is nothing new about Halliburton’s claimed “inventive step” – replacing traditionally metallic components of a downhole tool with non-metallic components to improve drillability. As shown below, the prior art discloses tools in which traditionally metallic components have been replaced with components made of non-metallic materials. In addition, the prior art discloses that replacing metallic components with non-metallic components improves the drillability of a downhole tool. Importantly, this prior art – the most relevant prior art – was not before the Patent Examiner during prosecution of the patents-in-suit.

Furthermore, neither the manner in which the downhole tool is placed in the well bore or removed from the well bore is new. The patents-in-suit admit that the positioning and setting of the downhole tools covered by Halliburton’s asserted claims are the same as that of prior art tools. Accordingly, “positioning [the] downhole tool into locking, sealing engagement with [the] well bore” was commonly known in the art. It also was commonly known in the art, for decades before the patents-in-suit were filed, that downhole tools could be removed from the well bore by drilling.

As a result, the district court, which considered the new prior art that was not before the Patent Examiner, properly found that Appellees had raised a substantial question regarding the invalidity of Halliburton's asserted claims. Indeed, the prior art compels only one conclusion: Halliburton's claims are invalid.

In light of the new prior art, Halliburton resorts to convoluted claim constructions, inserting claim limitations where none exist, impermissibly narrowing its claims to avoid their invalidity. For example, Halliburton argues that its claimed invention is limited to "drillable" tools with "specific design features to accommodate the benefits and problems of using non-metallic components." Halliburton's claims are not so limited.

This Court does not have to construe the claims, or even reach Halliburton's strained claim construction, however, on this record. The district court, as it was permitted to do, tentatively construed the claims and based its denial of a preliminary injunction on only one issue – that Appellees had raised a substantial question regarding the invalidity of the asserted claims. In these circumstances, this Court's review should be limited to the district court's conclusion regarding invalidity.

The remaining preliminary injunction factors – infringement, irreparable harm, balance of hardships, and public interest – also need not be considered by this Court because they were never reached by the district court. Indeed, they were hotly

contested, containing myriad factual issues that should be resolved by the district court before consideration by this Court.

STATEMENT OF FACTS

I. Background of Downhole Tools

Halliburton's patents-in-suit relate to downhole tools, including tools used to isolate or seal off portions of the well bore during certain well completion procedures.

(A2.) Tools for this purpose have been in existence for decades. (A1203-06.) These tools are set at a fixed location (depth) in the well bore and often are removed after the well procedures are completed. (A2.) These tools, which include packers, bridge plugs, frac plugs, and cement retainers, have three primary components: a center mandrel – the main structural body that supports the tool; a packing element – an often doughnut-shaped, rubber element positioned around the center mandrel to seal the space between the tool and the well bore; and a slip assembly or assemblies to anchor the tool in place in the well bore.¹ (A2-3.) Traditionally, these tools were constructed of metals such as steel or cast iron. (A2.)

¹A well bore is a hole made by a drilling rig. After the well is drilled, a string of relatively large-diameter tubing called casing is lowered into the well bore by the drilling rig and then cemented into place. In this Brief, the well bore and the well casing are treated as the same structures. (A2.)

Figure 2 of the patents-in-suit (A50; A67), reproduced in Figure A, shows a commonly-used prior art tool configuration. (A58, 5:19-24; A76, 5:42-46; cf. A1592, Figure E.)

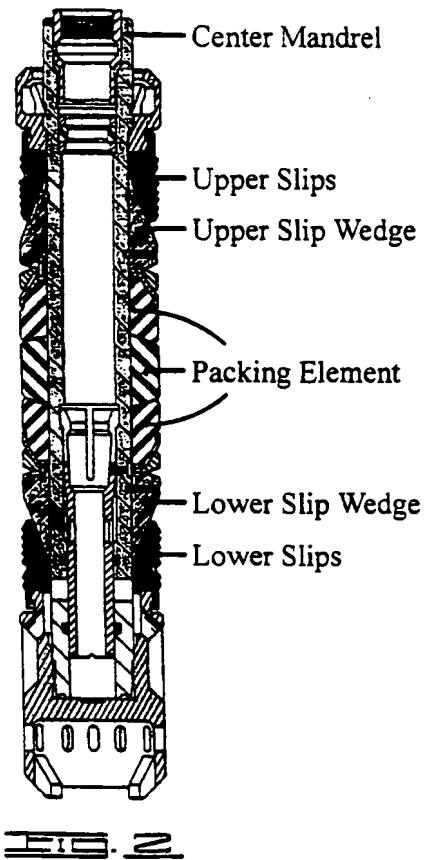


Figure A
Preferred Embodiment
Patents-in-Suit

To set the tool in the well bore, the slip assemblies are activated so the slips move over the slip wedges and extend radially outward until the slips engage the well

bore and lock the tool into place. At the same time, the packing element is compressed until it extends radially outward into contact with the well bore to seal the annular space between the tool and the well bore. (A62, 13:27-43; A80, 14:52-66.)

Although Figure 2 depicts what is commonly referred to as a "permanent" downhole tool, these tools are available in "retrievable" models as well. (A1612, 1:24-25.) Both permanent and retrievable models have one or more slip assemblies to anchor the tool, a packing element to seal the area between the tool and the well bore, and are locked into the well bore. Moreover, both are used for the same purpose: to isolate portions of the well bore during well completion procedures. (A 1612, 1:47-50.)

The primary difference between a permanent and a retrievable tool is how the tool is removed from the well bore. After a permanent tool is locked into place, it cannot be unlocked, and is removed by drilling or milling it out of the well bore. (A1612, 1:29-34.) After a retrievable tool is locked into place, it may be later unlocked, and is removed by pulling it out of the well bore. (A1612, 1:25-28.) If a retrievable tool cannot be unlocked and removed, it is drilled or milled out of the well bore just like a permanent tool. (A1024-25.)

II. The Asserted Claims

Halliburton has asserted claims 1 and 30 of the '468 patent and claim 3 of the '540 patent.² Claim 1 of the '468 patent ("claim 1") is a method claim for a well bore process:

1. A *well bore process* comprising the steps of:

constructing a downhole tool such that a component thereof is made of a non-metallic material, said tool comprising:

a center mandrel; and

a plurality of slips disposed around said mandrel for grippingly engaging the well bore when in a set position;

wherein, at least one of said mandrel and said plurality of slips is said component;

positioning said downhole tool into locking, sealing engagement with said well bore; and

drilling said tool out of said well bore.

(A63 (emphasis added).) Claim 30 of the '468 patent ("claim 30") is an apparatus claim:

30. A *downhole apparatus* for use in a well bore, said apparatus comprising:

a center mandrel made of a non-metallic material; and

²The '540 patent is a continuation-in-part of the '468 patent. (A66.)

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slip means disposed on said mandrel for grippingly engaging said well bore when in a set position.

(A63-64 (emphasis added).) Claim 3 of the ‘540 patent (“claim 3”) also is an apparatus claim, dependent from claims 1 and 2:

1. A *downhole apparatus* for use in a well bore, said apparatus comprising:

a center mandrel; and

slip means disposed on said mandrel for grippingly engaging said well bore when in a set position, said slip means being at least partially made of a non-metallic material.

2. The apparatus of claim 1 characterized as a packing apparatus and further comprising *packing means* disposed on said mandrel for sealingly engaging said well bore when in a set position.
3. The apparatus of claim 2 wherein said *slip means* is an upper *slip means* disposed above said *packing means* and further comprising a lower *slip means* disposed below said *packing means*,

said lower *slip means* being at least partially made of a non-metallic material.

(A82 (emphasis added).)

The claim limitations may be categorized by the (1) structure, (2) material composition, (3) positioning, and/or (4) removal of the downhole tool. First, the structural limitations at issue are the “*slip means*” and “*packing means*. Because these are means-plus-function limitations, they are not narrowly drawn to any specifically-defined structure.

Second, the material composition limitation requires that certain components of the downhole tool be made of “non-metallic materials.” The patents-in-suit disclose that replacing metallic components with components made of non-metallic materials improves the drillability of the tool. (A56, 2:61-69; A74, 2:65-A75, 3:4.)

Third, the positioning limitation requires that the downhole tool be placed into “locking engagement” with the well bore. (A63.) This is not a temporal limitation; that a retrievable tool may be locked into engagement with the well bore, and later unlocked and removed, does not exclude it from this limitation. The positioning limitation also requires that the tool be in “sealing engagement” with the well bore. (A63; A82.) To be in “sealing engagement” with the well bore, a tool must seal the area between the tool and the well bore; it does not have to seal the entire well bore. (A62, 13:63-66; A80, 14:61-64.)

Fourth, the removal limitation requires that the downhole tool be drilled out of the well bore. (A63.) However, neither the “constructing a downhole tool” step of claim 1, nor the “downhole apparatus” of claims 30 and 3, is limited to “drillable” tools, i.e., tools that *must* be removed by drilling. Accordingly, by virtue of the removal limitation, the claims do not cover only permanent tools. Nor do they exclude retrievable tools, which may be removed from the well bore by drilling. Indeed, the asserted claims encompass permanent as well as retrievable tools.

III. Overview of Prior Art References

Although only selected references are discussed below, it cannot be disputed that the art of downhole tools for use in well bore operations was developed decades ago and was very crowded by the time the patents-in-suit were filed in the early 1990s. (A49; A66.)

During prosecution of Halliburton's patents, the Patent Examiner was not aware, however, of the most relevant prior art. Specifically, the Fisher patent, which discloses a wooden bridge plug (A1203-06), and the Baker packers, two retrievable, fiberglass packers (A843-48), were never considered by the Patent Examiner. Indeed, the Fisher patent and the Baker packers were the primary references relied upon by the district court to find that Appellees had raised a substantial question of invalidity regarding Halliburton's asserted claims. (A7-19.)

A. The Fisher Patent

U.S. Patent No. 1,684,266 to Fisher ("Fisher") is for an improved bridge plug made of wood. (A1203-06.) Fisher issued on September 11, 1928. (A1203.)

Fisher discloses a permanent bridge plug that is positioned in a well bore and later removed by drilling.

Another object of the invention is to provide a bridging plug which is formed of a readily destructible material so that after the plug has been seated, it will be relatively easy

to remove the same for further drilling operations by a drilling tool.

(A1204, lns. 16-21.)

The structure and configuration of the Fisher tool in its initial (Fig. 1) and set (Fig. 2) position is shown in Figure B. (A1203.)

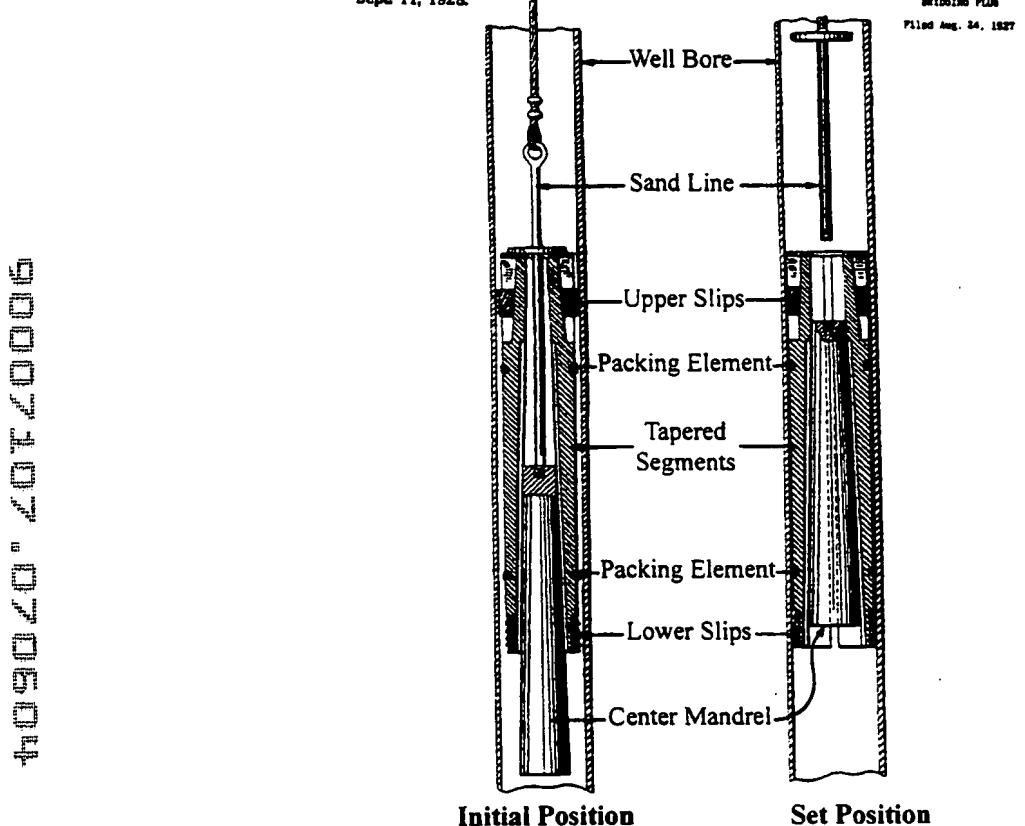


Figure B

Fisher Tool

The Fisher tool has a number of tapered segments that form a complete cylinder having a diameter slightly smaller than the interior diameter of the well bore. (A1204,

Ins. 70-81.) The tapered segments also form a conical bore. (A1204, Ins. 90-94.)

The tapered center mandrel fits inside the conical bore formed by the segments. (*Id.*)

Fisher discloses that the "segments and the mandrel are preferably formed of wood so that the plug can easily be drilled out of the [well bore]. . ." (A1204, Ins. 90-98.)

The Fisher tool has slip assemblies to anchor the tool in the well bore. The upper slips have upwardly directed teeth. (A1205, Ins. 3-12.) Each of the tapered segments has a stationary slip secured to its lower end. The lower slips have downwardly directed teeth. (*Id.*)

The Fisher tool has a "sealing device" consisting of "rubber rings," which "engage the interior of the well [bore] and effectively form a packer or seal between the body of the plug and the [well bore] to prevent leakage." (A1204, Ins. 30-35; A1205, Ins. 68-73.)

The Fisher tool is set by pulling up on the sand line, which raises the mandrel into contact with the segments, thus sealing the area between the mandrel and the segments. (A1205, Ins. 51-59; A1205-06, Ins. 125-2.) Raising the mandrel also causes the upper slips to be wedged into engagement with the well bore, preventing upward movement of the plug. (A1205, Ins. 73-81.) Likewise, raising the mandrel causes the lower slips to be wedged into engagement with the well bore, preventing downward movement of the plug. The upper and lower slips, when set, lock the tool

in place. (A1205, lns. 3-12.) At the same time, the rubber rings engage the well bore and are compressed thus “forming a packer or seal to prevent the leakage of fluid between the exterior surface of the segments and the [well bore].” (A1205, lns. 68-73.) The sand line is then removed, leaving the bridge plug to seal the well bore at the proper level. (A1205, lns. 81-90.)

B. The Baker References

The Baker references (“Baker”) are two prior art publications – the 1968 Baker Special Products Manual, disclosing the Baker Prime Fiberglass Packer, model number 738-09 (“the Prime Fiberglass Packer”) (A843-44) and the 1968 Baker Advertisement, disclosing the Prime Fiberglass Packer and a fiberglass version of the Baker Oil Tools AD-Type Tension Packer (“the AD Fiberglass Packer”) (A845-48).

1. The 1968 Baker Special Products Manual

Baker Oil Tools’s Prime Fiberglass Packer is a retrievable downhole tool.³ (A843-44.) The Prime Fiberglass Packer was constructed of a non-metallic laminate made of epoxy-fiberglass. (A844.) As shown in Figure C, the Prime Fiberglass Packer has a central mandrel, a packing element, and a plurality of slips disposed

³Halliburton’s criticism of retrievable packers as “unreliable, complex, and expensive to use” (Br. at 9), is belied by Halliburton’s description of its R-3 retrievable packer as “economical,” “low cost,” “versatile,” and “easily operated.” (A1024.)

around the mandrel. (A843.) Crushed carbide is bonded to the outer surface of the slips to enable the slips to bite into the well bore. (*Id.*)

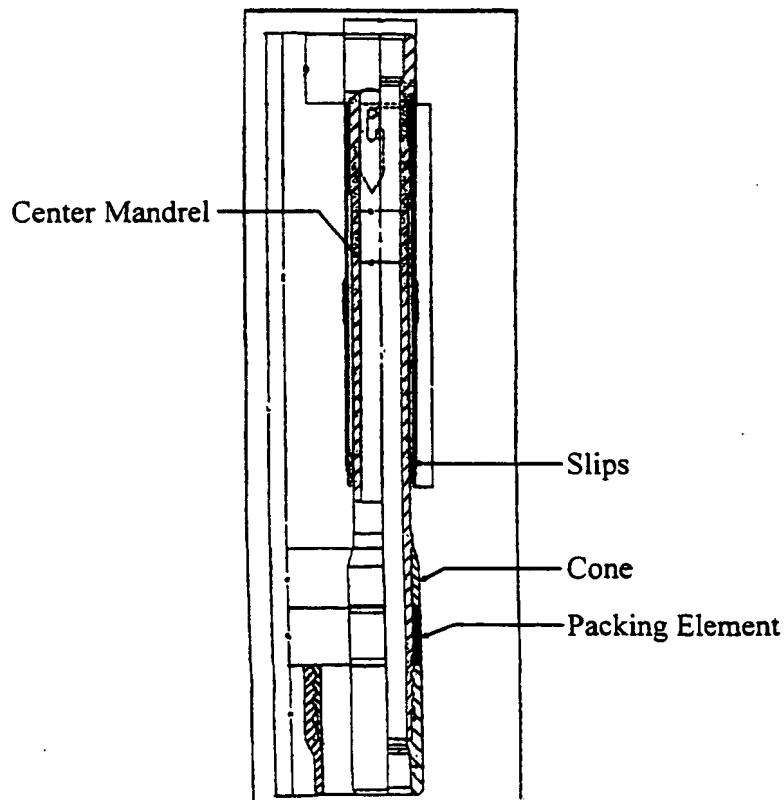


Figure C
Baker Prime Fiberglass Packer

The Prime Fiberglass Packer is set by pulling up on the mandrel with the tubing string, which causes the mandrel and cones to move under the slips. (A843-44.) The complementary angles of the cones and slips force the slips to move outward to engage the well bore when the packer is set. Maintaining the upward pull on the mandrel with the tubing string, which prevents the slips from disengaging, locks the

tool into place. The upward movement of the mandrel towards the slips also compresses the packing element until it expands outward to seal the area between the tool and the well bore. (*Id.*)

2. The 1968 Baker Advertisement

In June 1968, Baker Oil Tools advertised its "all-fiberglass packers" in World Oil Magazine. (A845-48.) The advertisement, reproduced as Figure D, shows two packers – the Prime Fiberglass Packer, discussed above, and the AD Fiberglass Packer. The AD Fiberglass Packer is a fiberglass version of Baker's AD-Type

□ Tension Packer, a prior art retrievable packer made of metal. (A835-36.)

As shown in Figure D, the AD Fiberglass Packer has a center mandrel, a packing element, and a plurality of slips disposed around the central mandrel. (A848.)

HARDWARE COMPANY

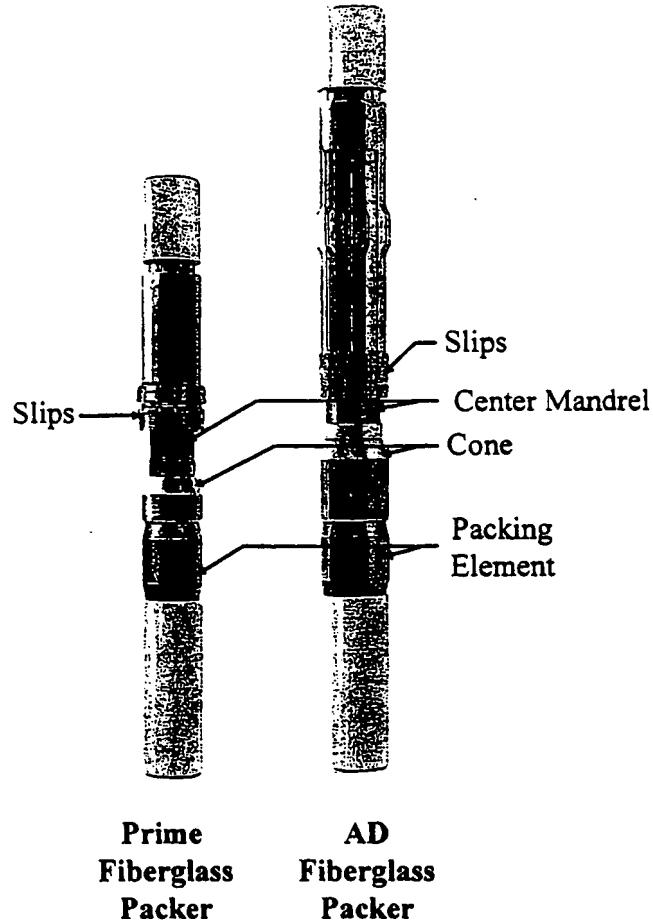


Figure D
Baker Advertisement

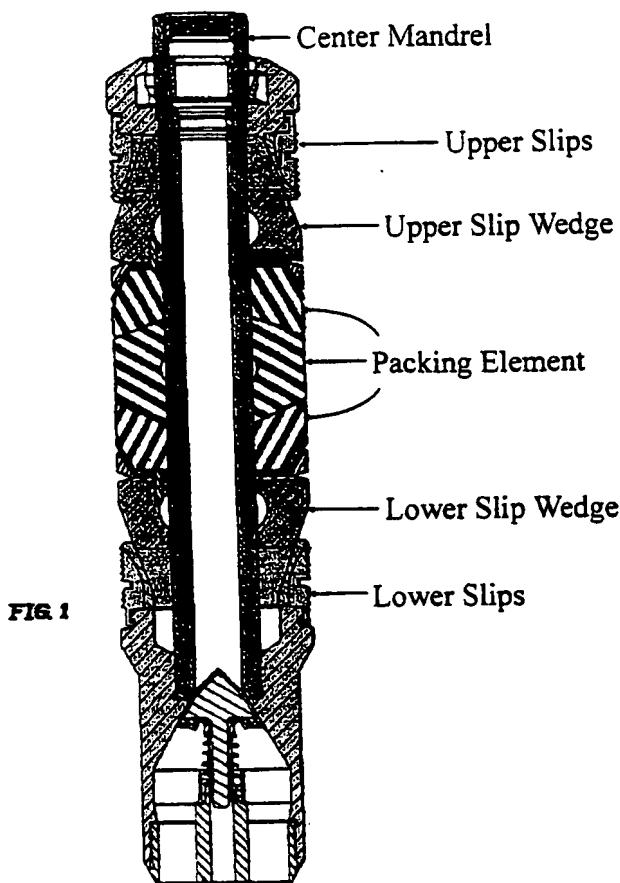
Like the Prime Fiberglass Packer, the AD Fiberglass Packer is set by pulling up on the mandrel with the tubing string, which causes the tapered cones to move up under the slips. (A844.) As the cones move under the slips, the slips extend radially outward into gripping engagement with the well bore. As with the Prime Fiberglass Packer, maintaining the upward pull on the mandrel by the tubing string, which

prevents the slips from disengaging, locks the tool into place. Pulling up on the mandrel also compresses the packing element, causing it to seal the area between the tool and the well bore. (*Id.*)

C. The Sullaway Patent

U.S. Patent No. 4,151,875 to Sullaway (“Sullaway”) (A1591-1600) discloses a permanent packer. Sullaway issued on May 1, 1979, more than ten years before the patents-in-suit were filed. (A1591.)

Sullaway discloses a center mandrel, upper and lower slip assemblies, and a packing element. (A1594, 1:45-48.) As shown in Figure E, the structure and configuration of these components of the Sullaway tool are identical to the preferred structure and configuration of the center mandrel, dual slip assemblies, and packing element disclosed by the patents-in-suit. Cf. Figure A (A50; A67), to Figure E (A1592).



**Figure E
Sullaway Tool**

The Sullaway tool is set by pulling up on the mandrel, which causes the slip wedges to cam the upper and lower slips into engagement with the well bore and locks the tool into place. (A1596, 6:69-A1597, 7:1-8.) Simultaneously, the packing element is pushed outward to seal the area between the tool and the well bore. The patents-in-suit disclose that the "inventive" downhole tools are positioned and set into engagement with the well bore in this same manner. (A62, 13:20-26; A80, 14:45-51)

(downhole tool is “positioned in well bore 12 and set into engagement therewith in a manner similar to prior art devices” like Sullaway).)

D. The Sukup Patent

U.S. Patent No. 4,708,202 to Sukup et. al. (“Sukup”) (A1606-21) discloses a permanent downhole tool that uses non-metallic components to improve its drillability. (A1612, 1:9-23; A1615, 7:17-55.) Sukup issued on November 24, 1987, more than three years before the patents-in-suit were filed. (A1606.)

Figure 7 of Sukup (A1608), reproduced as Figure F, discloses a downhole tool having a center mandrel and a plurality of slips (slip segments) disposed around the mandrel. (A1614, 5:54-56.) Above and below the slip segments are top cones and bottom cones. (A1614, 5:51-54.) In addition, Sukup discloses packing elements (seals) located above and below the top and bottom cones, respectively.

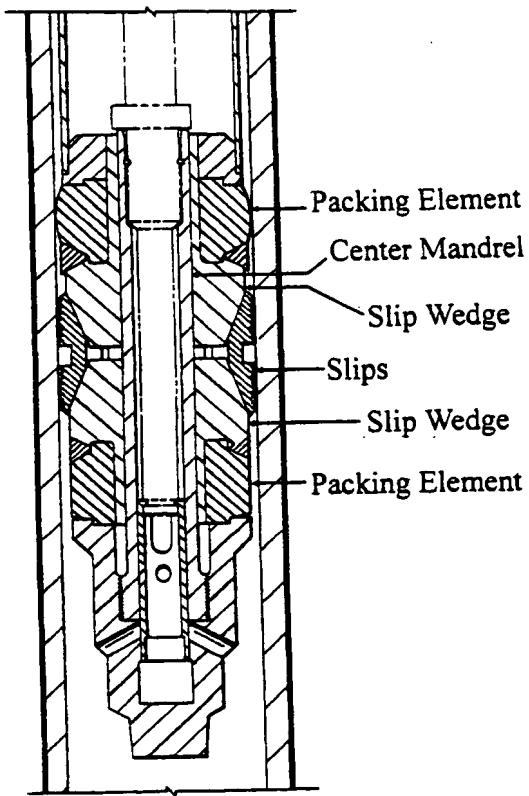


FIG. 7

Figure F
Sukup Tool

The Sukup tool is set by forcing the slips over the tapered cones, causing the slips to expand radially outward to engage the well bore and lock the tool in place. During the setting operation, the packing elements are compressed, forcing them to expand outward to seal the tool against the well bore. (A1614, 6:3-50.)

The Sukup tool is removed from the well bore by drilling. (A1615, 7:20-23; *see also* A1612, 1:9-12, 1:51-64.) To improve the tool's drillability, Sukup discloses that several components are molded from thermoplastic or thermoset synthetic resins, including the bottom assembly, the ring back up, the cones, and the lock hub.⁴ (A1615, 7:42-52; A1615, 8:3-13.)

E. The Muse Patent

U.S. Patent No. 3,306,366 to Muse ("Muse") (A864-75) discloses a permanent packer. Muse issued February 28, 1967, more than twenty years before the patents-in-suit were filed. (A864.) The Patent Office did not review Muse during the prosecution of the patents-in-suit.

The Muse tool, as shown in Figure G (A865), has a center mandrel and upper and lower slips disposed on the mandrel. (A869, 2:34-51.) The Muse tool also has a packing element located between the slips. (A869, 2:51-60.)

⁴Contrary to Halliburton's unsupported characterization (Br. at 10, 62), Sukup does not teach that "metallic materials be used for the high-stressed critical tool components . . . while non-metallic materials be used for the less critical components." Sukup merely teaches that certain components of the downhole tool may be made of a non-metallic material to improve drillability. Moreover, Harris's testimony regarding Sukup's disclosure (Br. at 10) is irrelevant. *See Voice Techs. Gp., Inc. v. VMC Sys., Inc.*, 164 F.3d 605, 616 (Fed. Cir. 1999) (acknowledging that the clear disclosure of a reference cannot be altered by after-the-fact testimony).

Feb. 28, 1967

J. P. MUSE
WELL PACKER APPARATUS

3,306,366

Filed April 22, 1964

5 Sheets-Sheet 3

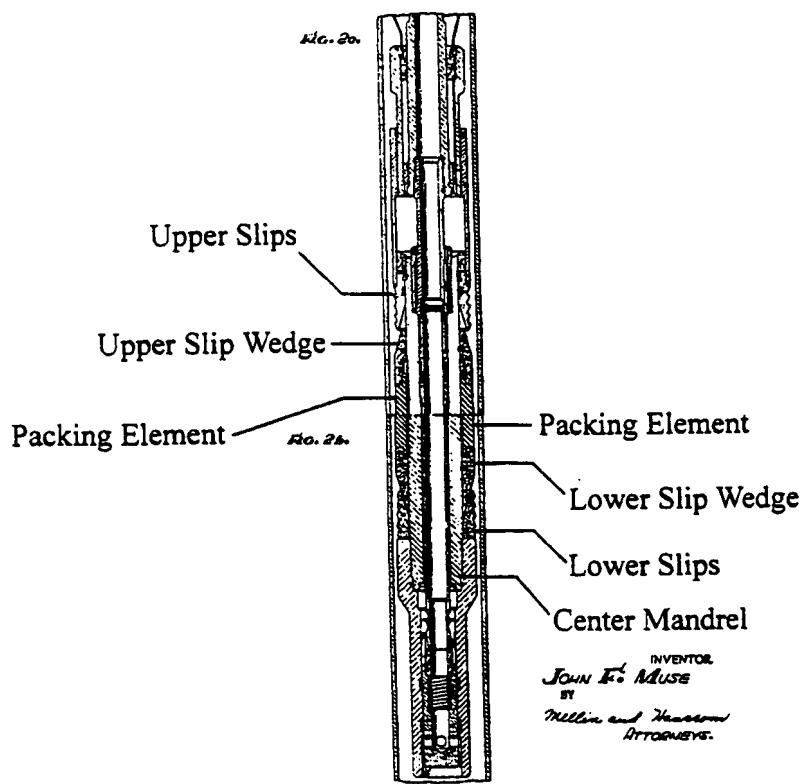


Figure G
Muse Tool

The Muse tool is positioned into engagement with the well bore in the same manner as the prior art tools discussed above. (A871, 5:26-6:24.)

IV. Halliburton's Claimed Invention Is Not New

A. There Is Nothing New About The Structural Limitations

Halliburton's patents admit that the overall structure and configuration of the claimed downhole tools are specifically disclosed by the prior art.

While ***the first embodiment 20 incorporates the same configuration and general components as prior art packers made of metal***, second packer embodiment 100 and the other embodiments described herein *comprise specific design features to accommodate the benefits and problems of using non-metallic components, such as plastic.*

(A59, 7:23-29 (emphasis added); A77, 7:50-56.) (*See also* A58, 5:19-24 (“The size and configuration of packer 20 is substantially the same as the previously mentioned prior art EZ Drill SV Squeeze packer [Sullaway tool].”); A76, 5:44-46.)

Despite this admission (shown above in bold italics), Halliburton represents that its “patented inventions are not broadly directed to all types of packers and bridge plugs but instead disclose and claim embodiments that ‘comprise specific design features to accommodate the benefits and problems of using non-metallic components,’” disingenuously relying upon only the second part of the above-quoted sentence (shown in italics). (Br. at 22-23.)

The asserted claims are not, however, limited to only embodiments incorporating “specific design features.” To the contrary, the claims are broad enough to encompass downhole tool configurations, including “slip means” and

“packing means,” of the prior art.⁵ Accordingly, there is nothing new about the structural limitations.

B. There Is Nothing New About The Material Composition Limitation

Halliburton’s claimed “inventive step” is nothing more than merely replacing traditionally metallic components known in the prior art with non-metallic components of the same configuration. (A57, 3:6-12; A75, 3:10-16.) However, tools having non-metallic components instead of metallic components have been known in the art for decades.

As shown above, Fisher discloses a permanent tool made of wood to improve its drillability. (A1203-06.) Sukup also teaches that a tool’s drillability can be improved by using non-metallic components. (A1615, 7:42-52; A1615, 8:3-13.) Moreover, the Baker packers were made entirely of fiberglass. (A843-44; A845-48.)

C. There Is Nothing New About The Positioning Limitation

Halliburton admits in the patents-in-suit that the claimed downhole tools are “positioned into locking, sealing engagement with [the] well bore” in a manner

⁵The asserted claims also are not limited to packers and bridge plugs, as Halliburton represents (Br. at 20), but instead are directed to “downhole tools.” Indeed, the patents-in-suit unambiguously state that the claimed downhole tool is not limited to only packers and bridge plugs. (*See, e.g.*, A57, 3:61-63 (“The tool may be selected from the group consisting [of] packers and bridge plugs, but is not limited to these devices.”); *see also* A82, 17:3-4.)

commonly known in the prior art:

Downhole tool apparatus 10 is *positioned in well bore 12 and set into engagement therewith in a manner similar to prior art devices made with metallic components.* For example, a *prior art apparatus and setting thereof is disclosed in* the above-referenced U.S. Patent No. 4,151,875 to Sullaway.

(A62, 13:20-26 (emphasis added); A80, 14:45-51.) Indeed, the patents-in-suit disclose the same structure – a slip assembly and a packing element – used in the prior art to position a downhole tool into “locking, sealing engagement with [the] well bore.” (A57, 3:18-25; A62, 13:36-39; *see also* A75, 3:25-28.)

D. There Is Nothing New About The Removal Limitation

There is nothing new about drilling downhole tools out of a well bore. (A362-63.) Both permanent and retrievable tools had been drilled out of well bores for decades before the patents-in-suit were filed. (A1024; A1204, lns. 16-21; A1615, 7:20-23; A56, 1:29-51.)

SUMMARY OF ARGUMENT

As shown above, there is nothing new about Halliburton’s claimed downhole tool invention. Indeed, the “inventive step” claimed by Halliburton during prosecution – replacing metallic components with non-metallic components to improve the tool’s drillability – was small in light of the prior art that was considered

by the Patent Examiner. For example, Sukup discloses that metallic components may be replaced with non-metallic components to improve drillability.

In light of prior art that was *not* before the Patent Examiner, however, it is clear that Halliburton's "inventive step" was taken more than 60 years before by Fisher and more than 30 years before by Baker. In light of Fisher and Baker, the district court properly found that Appellees had raised a substantial question regarding the invalidity of the asserted claims.

Specifically, Fisher discloses a downhole tool with a center mandrel and an upper and lower slip means disposed on the mandrel. The Fisher tool is locked into the well bore by the action of the upper and lower slips. The Fisher tool has a packing means disposed on the mandrel that seals the area between the tool and the well bore. Moreover, Fisher discloses that the tool is preferably made of wood to improve its drillability. Thus, Fisher anticipates all of Halliburton's asserted claims.

Furthermore, the Baker fiberglass packers have a center mandrel and a slip means disposed on the mandrel. The Baker packers are locked into the well bore by maintaining an upward pull on the mandrel in opposition to the slip means. The Baker packers also have a packing means that seals the area between the tool and the well bore. Baker thus anticipates claim 30.

In addition, Baker in combination with Fisher, Sukup, or common knowledge in the industry – as demonstrated by Halliburton’s own Sales and Service Catalog – that downhole tools may be removed from the well bore by drilling makes claim 1 obvious. Moreover, Baker in combination with the commonly-known prior art dual slip structures of Sullaway and Muse makes claim 3 obvious.

As a result, because the Appellees raised a substantial question of invalidity of Halliburton’s asserted claims, the district court did not abuse its discretion in denying Halliburton’s Motion for a Preliminary Injunction.

ARGUMENT

I. Legal Standards

A. Preliminary Injunction Law

This Court has “cautioned . . . that a preliminary injunction is a drastic and extraordinary remedy that is not to be routinely granted.” *Intel Corp. v. ULSI Sys. Tech., Inc.*, 995 F.2d 1566, 1568 (Fed. Cir. 1993).

A party seeking a preliminary injunction must show (1) reasonable likelihood of success on the merits; (2) irreparable harm; (3) that the balance of hardships tips in its favor; and (4) the impact of the injunction on the public interest. *Hybritech Inc. v. Abbott Labs*, 849 F.2d 1446, 1451 (Fed. Cir. 1988). In determining whether a preliminary injunction should issue, the district court must balance these factors

against one another and against the extent of relief sought. *Reebok Int'l, Ltd. v. J. Baker, Inc.*, 32 F.3d 1552, 1555 (Fed. Cir. 1994).

While granting a preliminary injunction requires analysis of all four factors, *Polymer Techs., Inc. v. Bridwell*, 103 F.3d 970, 973 (Fed. Cir. 1996), a district court may deny a motion based on a movant's failure to show any one of the four factors – especially either of the first two – without analyzing the others. *See Jack Guttman, Inc. v. Kopykake Enter., Inc.*, 302 F.3d 1352, 1356 (Fed. Cir. 2002).

Regarding the first factor – reasonable likelihood of success – the movant must show that (1) the asserted claims have been infringed, *and* (2) any challenges to the validity and enforceability of the patents-at-issue “lack substantial merit.” *Purdue Pharma L.P. v. Boehringer Ingelheim GmbH*, 237 F.3d 1359, 1366 (Fed. Cir. 2001); *see also Reebok Int'l*, 32 F.3d at 1556. However, if the non-movant raises “a substantial question concerning infringement or validity, meaning that it asserts a defense that [the movant] cannot prove ‘lacks substantial merit,’” the preliminary injunction should not issue. *Tate Access Floors v. Interface Architectural Resources, Inc.*, 279 F.3d 1357, 1365 (Fed. Cir. 2002).

In showing a substantial question of invalidity, “[v]ulnerability is the issue at the preliminary injunction stage, while validity is the issue at trial. The showing of a substantial question as to invalidity thus requires less proof than the clear and

convincing showing necessary to establish invalidity itself.” *Amazon.com, Inc. v. Barnesandnoble.com, Inc.*, 239 F.3d 1343, 1359 (Fed. Cir. 2001).

In this case, the district court denied Halliburton’s request for a preliminary injunction because Appellees raised a substantial question regarding the invalidity of the asserted claims.

B. The District Court Was Entitled to Rely Upon A Tentative Claim Construction

Here, the district court based its denial of a preliminary injunction on a tentative claim construction (A9),⁶ which it was permitted to do.

In denying preliminary injunctive relief, a district court has no obligation to interpret the claims conclusively and finally.

[A]t the preliminary injunction stage we will not lightly intrude upon a district court’s discretionary decision to issue only a tentative claim construction and to base its resolution of a preliminary injunction motion upon that tentative claim construction.

Guttman, 302 F.3d at 1361.

⁶Halliburton filed its Motion For a Preliminary Injunction (A500-02) on the same day as it filed its Original Complaint (A100-104). Accordingly, the district court’s decision on Halliburton’s motion occurred before there had been any meaningful discovery in the case. See, e.g., *Guttman*, 302 F.3d at 1361 (holding that district court may engage in “rolling claim construction” when “motions for preliminary injunction may come for decision before significant discovery has occurred”).

When the district court relies upon a tentative claim construction, as the district court did here, this Court reviews only the tentative claim construction and resulting finding on likelihood of success:

We do not regard it as our function under these circumstances to definitively construe claim 1 of the '603 patent, or to review as if from final judgment the district court's tentative construction without the more complete record that the district court deemed necessary to its own final decision. *Here, we review only the district court's tentative claim construction and its resulting finding on the likelihood of successfully proving infringement, which form an adequate basis for our affirming its denial of the preliminary injunction.*

Int'l Communication Materials v. Ricoh Co., 108 F.3d 316, 319 (Fed. Cir. 1997) (emphasis added). This Court recently has affirmed its narrow scope of review in these circumstances. In *National Steel Car, Ltd. v. Canadian Pacific Railway, Ltd.*, No. 03-1256, 2004 WL 190257, at *13 (Fed. Cir. Jan. 29, 2004), the Court refused to definitively construe the claims or even review the district court's tentative claim construction, instead limiting its review to the district court's findings regarding likelihood of success.

C. Standard of Review

The “standard of review of a district court’s denial of a preliminary injunction motion is narrow.” *Int’l Communication*, 108 F.3d at 318. “One denied a preliminary

injunction must meet the heavy burden of showing that the district court abused its discretion, committed an error of law, or seriously misjudged the evidence.” *Smith Int'l, Inc. v. Hughes Tool Co.*, 718 F.2d 1573, 1579 (Fed. Cir. 1983); *see also Guttman*, 302 F.3d at 1356.

D. Scope Of Appeal is Limited to The District Court’s Finding of Substantial Question of Invalidity

Because the district court based its denial of preliminary injunctive relief on one prong of the likelihood of success factor – that Appellees had raised a substantial question of invalidity – this is the only issue proper for this Court’s review. *See Guttman*, 302 F.3d at 1362; *Reebok*, 32 F.3d at 1555. None of the other preliminary injunction factors (i.e., the infringement prong of the likelihood of success factor, irreparable harm, balance of hardships, and public interest) are subject to review because the district court did not reach them. *See, e.g., Fromson v. W. Litho Plate & Supply Co.*, 853 F.2d 1568, 1570 (Fed. Cir. 1988) (admonishing counsel that the Federal Circuit “is a court of review, i.e., . . . it will not find the facts *de novo*” and that a “finding not made cannot be reviewed”). In addition, because no one factor is determinative, the four factors must be balanced against one another to determine if a preliminary injunction is appropriate. *Guttman*, 302 F.3d at 1363 (holding that “balancing of the four factors . . . rests within the discretion of the trial court, not the

appellate court"). Indeed, this Court has steadfastly refused to make factual determinations in the first instance. *See, e.g., id.; Black & Decker, Inc. v. Hoover Service Center*, 886 F.2d 1285, 1289-90 (Fed. Cir. 1989) (noting the parties' "monumental lack of concern for the fair and efficient administration of the appellate process" in part because the parties "[a]sked us to decide a plethora of factual and legal issues not reached or decided by the district court").

Accordingly, even if this Court were to find for Halliburton on the validity prong of the likelihood of success factor, Halliburton's request that this Court direct the district court to enter a preliminary injunction is improper. *See, e.g., Black & Decker*, 886 F.2d at 1296 (refusing to enter preliminary injunction even after finding that district court abused discretion, instead remanding case "in light of the determinations . . . yet to be made, and properly only to be made in the first instance, by the district court").

II. The District Court's Tentative Claim Construction

A. The Law of Claim Construction

1. Presumption of Ordinary Meaning

The claim terms bear a "heavy presumption" that they have the ordinary meaning that would be attributed to those words by persons skilled in the relevant art.

See, e.g., CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1366 (Fed. Cir. 2002).

2. Construction of Means-Plus-Function Limitation

Construction of a means-plus-function limitation involves two steps. First, the claimed function must be identified. Second, the structure, if any, disclosed in the specification that corresponds to the claimed function must be identified. To correspond to the claimed function, “the structure must not only perform the claimed function, but the specification must clearly associate the structure with the performance of the function.” *See, e.g., Cardiac Pacemakers, Inc. v. St. Jude Med., Inc.*, 296 F.3d 1106, 1113 (Fed. Cir. 2002). Although the corresponding structure need not include all things necessary to enable the claimed invention to work, it must include all structure that actually performs the recited function. *Id.* at 1119.

Moreover, a means-plus-function claim limitation “shall be construed to cover the corresponding structure . . . described in the specification *and equivalents thereof.*” 35 U.S.C. § 112 ¶ 6 (emphasis added); *see also Caterpillar Inc. v. Deere & Co.*, 224 F.3d 1374, 1379 (Fed. Cir. 2000). Although the statute requires an accused structure to be equivalent to the disclosed structure, it does not mandate an equivalency comparison that necessarily focuses heavily or exclusively on physical structure. *IMS Tech., Inc. v. Haas Automation, Inc.*, 206 F.3d 1422, 1436 (Fed. Cir.

2000). Nor does it require equivalency to be determined on a “component-by-component” basis. *Odetics, Inc. v. Storage Tech. Corp.*, 185 F.3d 1259, 1268 (Fed. Cir. 1999).

B. The District Court’s Construction of “Slip Means”

Claim 30 and claim 3 recite a “slip means disposed on [the] mandrel for grippingly engaging [the] well bore when in a set position.” (A64, 17:1-2; A82, 17:11-12.)

The district court tentatively construed “slip means” as a means-plus-function limitation. (A9.) Pursuant to means-plus-function claim interpretation principles and the plain language of the claims, the district court found that the “slip means” structure must perform the function of “engag[ing] the well bore or well casing to prevent movement of the plug when the tool is set.” (A10.) Accordingly, the district court found that the “slip means” limitation was broad enough to include the slip structure of the tools disclosed by Fisher and Baker, both of which perform this function. (A9.)

The district court also found that the “slip means” structure did not include slip supports, observing that

[b]ecause Halliburton’s patent claims do not include a support structure for the slips on the opposite side of the slips from the wedge, the Court declines to read this

limitation into claim 30 of the ‘468 patent in order to avoid the anticipation of the ‘468 patent by the [Fisher] patent.

(A10-11.)

1. Construction of “Slip Means”

For preliminary injunction purposes, BJ agrees that “slip means” is a means-plus-function limitation. There is no dispute that the function of the “slip means” is “to grippingly engage said well bore when in the set position.” (Br. at 46.)

There also is no dispute that the corresponding structure necessary to perform the claimed function includes at least the slips. *Cardiac Pacemakers*, 296 F.3d at 1113. The slips are necessary because they are the only structure that “grippingly engage[s the] well bore.” The patents-in-suit provide as follows:

Eventually, upper *slips* 28 and lower *slips* 54 are placed in gripping engagement with well bore 12 and packer elements 40 and 42 are in sealing engagement with the well bore.

(A62, 13:36-39 (emphasis added); A62, 14:11-13; A81, 15:19-23; A81, 15:24-30.)

In addition, the intrinsic evidence supports the district court’s construction that slip wedges are necessary because they keep the slips in gripping engagement with the well bore in the set position.⁷ (A62, 13:53-62; A81, 15:12-24.) Specifically, the

⁷The district court did not, as Halliburton states (Br. at 48) exclude the slip wedges from its construction of “slip means.” Rather, the court expressly included the slip wedges within the scope of “slip means.” (A12.)

patents-in-suit disclose that the tool is set like prior art tools, as disclosed in the Sullaway patent (incorporated by reference into the patents-in-suit). The Sullaway patent provides that the slip wedges keep the slips in gripping engagement with the well bore when the tool is in the set position.

As the . . . mandrel is moved upward, the upper slip wedge 13 cams slips 17 more tightly into engagement with the well bore, the slips 17' moving along lower slip wedge 15 are cammed tightly into engagement with the well bore and the movement of the upper 13 and lower 15 slip wedges along the . . . mandrel causes the packer assembly 14 to be compressed tightly into sealing engagement with the well bore.

(A1596-97, 6:69-7:8; *see also* A62, 13:20-26; A80, 14:45-51.)

Accordingly, the patents-in-suit support the district court's construction of "slip means," as used in both patents, to include the slips and the slip wedges. (*See also* A80, 14:45-51; A77, 8:15-16 ("Disposed below spacer ring 110 is an upper slip means comprising slips and a wedge."); A68-72, Figs. 3A, 4A, 5A, 6A, 7 and 8 (labeling only the slips 116 and slip wedges 126 as "slip means" 115).)

In addition to the slips and slip wedges, the "slip means" limitation also covers any equivalent slip assembly. 35 U.S.C. § 112 ¶ 6; *Caterpillar*, 224 F.3d at 1379.

2. Halliburton's Construction Of "Slip Means" Is Wrong

Halliburton's proposed construction of "slip means" for the '468 patent as the slips, slip wedges, and slip supports is impermissibly narrow. In support of its proposed construction, Halliburton relies upon an ambiguous statement in the specification of the '468 patent:

slip means *may* comprise a wedge engaging a plurality of slips with a slip support on the opposite side of the slips from the wedge.

(A57, 3:26-28 (emphasis added).) However, as the district court recognized, this statement uses the phrase "may comprise," which is not an exclusive list of "slip means" components. (A9; *see also* THE AMERICAN HERITAGE DICTIONARY, 774 (2d ed. 1985) ("may" is permissive: "to be allowed or permitted to").) Accordingly, because the phrase Halliburton relies upon does not disclose the necessary "slip means" structure, nor link any particular structure to the claimed function, it is irrelevant to a means-plus-function analysis. *See, e.g. Asyst Techs. Inc. v. Empak, Inc.*, 268 F.3d 1364, 1371 (Fed. Cir. 2001) (section 112 paragraph 6 does not permit incorporation of structure from the written description beyond that necessary to perform the claimed function).

Halliburton also argues, in a strained attempt to avoid the prior art, that "slip means" must include a slip support. However, the claims should not be so limited

because the slip support does not perform the claimed function when the tool is in the set position.⁸ *See id.*

Furthermore, Halliburton did not expressly recite the slip support structure in its asserted claims, it did not clearly define “slip means” to include the slip support in the specifications, and it did not clearly link the slip support to the claimed function. (*See A80, 14:45-51; A1596-97 6:69-7:8.*) Accordingly, Halliburton cannot now rely on this structure as a point of novelty. (*See A11.*) Indeed, the patents-in-suit show that the point of novelty is *not* the structure or configuration of the claimed downhole tool. (A58, 5:21-23, A58, 6:35-39; A76, 5:44-46, A76, 6:58-62.)

For the first time on appeal, Halliburton asserts a new, even more narrow, definition of “slip means” for the ‘540 patent.⁹ Relying on an irrelevant passage in

⁸Halliburton’s criticism of the district court’s exclusion of a slip support from the scope of “slip means” as premised on a misunderstanding of this Court’s precedent in *In re Lundberg*, 244 F.2d 543, 548 (CCPA 1957), overruled on other grounds by *In re Donaldson Co.*, 16 F.3d 1189, 1193-94 (Fed. Cir. 1994) (Br. at 48), is unfounded. The *In re Lundberg* court held that it is improper to read limitations from the specification into the claims to impart patentability. Indeed, the district court’s exclusion of a slip support comports with *In re Lundberg* because the slip support is not necessary or corresponding structure for performing the claimed function. *See Cardiac Pacemakers*, 296 F.3d at 1113.

⁹Because Halliburton never asserted this definition of “slip means” in the district court, it has waived the construction for this appeal. *See, e.g., Interactive Gift Express, Inc. v. Compuserve, Inc.*, 256 F.3d 1323, 1346 (Fed. Cir. 2001) (acknowledging that doctrine of waiver applies “to preclude a party from adopting a new claim construction position on appeal”).

the specification for support, Halliburton argues that “slip means” in the ‘540 patent should include the slips, slip wedges, slip supports, and retaining means.

The slip means comprises a slip wedge positioned around the center mandrel, a plurality of slips disposed *in an initial position* around the mandrel and adjacent to the wedge, retaining means for holding the slips *in the initial position*, and a slip support on an opposite side of the slips from the wedge.

A75, 3:29-34 (emphasis added). However, this passage describes the tool when it is in the “*initial position*,” not in the “*set position*,” as mandated by claim 3. Indeed, the ‘540 patent specifically provides that the “retaining means” is used to keep the slips in their “*initial position*,” which is “*out of engagement with the well bore*.” (A82, (claim 19).) Moreover, Halliburton’s proposed construction is contradicted by the tool’s operation: once the slips begin to slide up the slip wedges and expand radially outward, the retaining means is broken and destroyed before the tool reaches the set position. (*See, e.g.*, A81, 15:19-26; A81, 15:50-57.) As a result, “slip means” should not be narrowly interpreted to include the retaining means because the retaining means does not perform the claimed function of “grippingly engaging the well bore *when in the set position*.” *Asyst Techs.*, 268 F.3d at 1369.

Halliburton’s argument that the “slip means” should be narrowly limited to a specific structure also is contradicted by the patents-in-suit, which acknowledge that

the “intent of the invention is to provide *devices of flexible design in which a variety of configurations may be used*,” and that persons of skill in the art may make “numerous changes in the arrangement and construction of parts and the steps of the methods.” (A63, 15:12-25 (emphasis added); A81, 16:59-17:3.)

The district court properly applied means-plus-function claim interpretation principles to construe “slip means” in accordance with the patents-in-suit.

C. The District Court’s Construction of “Packing Means”

Claim 3 requires that the “downhole apparatus” include a “packing means disposed on said mandrel for sealingly engaging said well bore when in a set position.” The district court tentatively construed “packing means” as a means-plus-function limitation, identifying the claimed function as “to sealingly engage the well bore when the tool is set.” (A11, A16.) Accordingly, the court construed the limitation to cover the “rubber rings and possibly wooden segments disposed on the mandrel” of the Fisher tool as well as the packing element of the Baker packers, both of which “sealingly engage the well bore when the tool is set.” (*Id.*)

1. Construction of “Packing Means”

For preliminary injunction purposes, BJ agrees that this is a means-plus-function limitation. There is no dispute that the function of the “packing means” is to “sealingly engage the well bore when in a set position.” (Br. at 49.) While the

patents-in-suit disclose “two end packer elements 40 and a central packer element 42” as performing the claimed function, the claim is not limited to this structure, as Halliburton argues. (Br. at 57-58.) Instead, “packing means” must be construed to include equivalent structures that perform the claimed function. 35 U.S.C. § 112 ¶

6.

Indeed, even Halliburton has admitted that “packing means” is not limited to the structure that it now asserts on appeal. For example, Halliburton has described the packing means as “a generally doughnut-shaped, rubber element positioned around the center mandrel” (A513) that, when compressed, “expand[s] radially and seal[s] with the well bore.”¹⁰ (A516). In addition, in arguing that BJ’s tool infringes, Halliburton construed “packing means” to cover a single packing element. (See A701) (Python tool has a “packing element on the tool designed to seal with the well bore.”); *see also* A640.) Thus, Halliburton has acknowledged that different structures are covered by the “packing means” limitation.¹¹

¹⁰The district court adopted this description of a “packing element” in its order. (A2-3:)

¹¹The patents-in-suit support that “packing means” should not be narrowly limited to a specific structure: the “intent of the invention is to provide *devices of flexible design in which a variety of configurations may be used.*” (A63, 15:12-14 (emphasis added); A81, 16:59-61.)

As a result, the district court properly construed “packing means” to cover the equivalent packing elements of Fisher and Baker, both of which seal the area between the tool and the well bore.

D. The District Court’s Construction of “Disposed On”

Claim 30 and claim 3 require that the “slip means” be “disposed on” the mandrel. Claim 3 further requires that the “packing means” be “disposed on” the mandrel. The district court held that “‘disposed on’ does not require that the slip means be physically attached to the mandrel.” (A14.)

1. Construction of “Disposed On”

“Disposed on” is defined by the prosecution history of the patents-in-suit. *See, e.g., Rheox, Inc. v. Entact, Inc.*, 276 F.3d 1319, 1324-25 (Fed. Cir. 2002) (using prosecution history to aid in claim construction). During prosecution, one of Halliburton’s proposed claims (claim 14) included a limitation for a packing element disposed on the mandrel. (A1484.) The Patent Examiner rejected the claim in light of Sukup. (A1513.) In response, Halliburton argued that “Sukup does not disclose a packing means disposed on the mandrel” because Sukup’s packing elements were disposed on “sleeves” that were between the mandrel and the packing elements. (A1563.) The Patent Examiner rejected Halliburton’s argument as “not . . .

persuasive” because Sukup’s packing elements (seals) were indirectly disposed on the mandrel:

In regard to Sukup . . . the seals are *indirectly disposed on the mandrel* and are slid able relative to the mandrel as discussed in the rejection above.

(A1532 (emphasis added).) By not traversing or appealing the Examiner’s rejection, Halliburton conceded this construction. (A1534-35.) Thus, in accordance with the prosecution history, “disposed on” means that the “slip means” and “packing means” can be located either directly or indirectly on the mandrel. *See, e.g., Southwall Techs., Inc. v. Cardinal IG Co.*, 54 F.3d 1570, 1576 (Fed. Cir. 1995) (noting that “the prosecution history limits the interpretation of claim terms so as to exclude any interpretation that was disclaimed during prosecution”).

This construction also is consistent with the ordinary meaning of the term “disposed on.” The verb “dispose” means to “place, or set in a particular order.” THE AMERICAN HERITAGE DICTIONARY, 407 (2d ed. 1985). Although “on” may be defined as Halliburton asserts (Br. at 50), the term is open to multiple interpretations and also is defined as “used to indicate proximity: *a town on the border.*” THE AMERICAN HERITAGE DICTIONARY, 867 (2d ed. 1985) (definition 1.d.) Here, this is the more preferred interpretation in light of the prosecution history – that the “packing means” and “slip means” may be in close proximity to the mandrel but do

not have to be in physical contact with the mandrel. *See, e.g., Texas Digital Sys., Inc. v. Telegenix, Inc.*, 308 F.3d 1193, 1201 (Fed. Cir. 2002) (using prosecution history to determine which ordinary meaning should apply to claim term).

2. Halliburton's Construction of "Disposed On" Is Wrong

Halliburton's statement to this Court that "HES expressly relied on the 'disposed on' language to distinguish its packer 'disposed on the mandrel' from Sukup's packers 90 and 222 that were not in direct physical contact with mandrel 22" (Br. at 51) is disingenuous. As shown above, the Patent Examiner expressly rejected the construction Halliburton conceded during prosecution, but now asserts, i.e., that the "slip means" and "packing means" must be in physical contact with the mandrel. (A1532.)

Furthermore, Halliburton's argument that "[e]very embodiment in the HES patents discloses slip means and packing means in physical contact with the center mandrel" is misplaced because the claims are not limited to the structure disclosed in the preferred embodiments. *See, e.g., Vulcan Eng'g Co., Inc. v. FATA Aluminum, Inc.*, 278 F.3d 1366, 1376 (Fed. Cir. 2002); *see also* A63, 15:13-15.

The district court's interpretation of "disposed on" is thus in accordance with the prosecution history of the patents-in-suit as well as the ordinary meaning of the term.

E. The District Court’s Construction Of “Locking, Sealing Engagement”

Claim 1 requires the downhole tool be positioned into “locking, sealing engagement” with the well bore. Claim 3 requires that the packing means “sealingly engage” the well bore.

The district court’s construction of the “locking engagement” requirement is supported by the ordinary meaning of “locking.” (A13.) The district court also found that the “sealing engagement” limitation requires that the area between the tool and the well bore be sealed, but does not require that the tool perfectly seal the well bore. (*Id.*) The court’s construction of “sealing engagement” is supported by its ordinary meaning and the patents-in-suit.

1. Construction of “Locking Engagement”

The “locking engagement” requirement of claim 1 appears only in the claims and is not defined in either the ‘468 patent or prosecution history. The term is thus given its ordinary meaning under this Court’s precedent. *See, e.g., Texas Digital Systems*, 308 F.3d at 1202. The term “locking” means “to hold fast or inactive; to fix in a particular situation or operation.” WEBSTER’S NINTH NEW COLLEGIATE DICTIONARY, 701 (1991). In accordance with its ordinary meaning, “locking engagement” means that once the tool is positioned into engagement with the well

bore and set, the tool will be fixed in that particular situation, i.e., will remain in the set position.

2. Construction of “Sealing Engagement”

In addition to claim 1, claim 3 requires that the “packing means” is in “sealing engagement with the well bore.” This limitation means that the downhole tool must be positioned in the well bore *so that the annulus between the tool and the well bore is secure against leakage.*

This construction is supported by the ordinary meaning of the verb “seal” and the patents-in-suit. *See, e.g., Texas Digital Systems*, 308 F.3d at 1201. It is undisputed that “seal” means to “close or make secure against access, leakage, or passage by a fastening or coating.” WEBSTER’S NINTH NEW COLLEGiate DICTIONARY, 1058 (1991) (definition 3b); (Br. at 54).

The area that the “packing means” must seal is the area between the tool and the well bore. This is supported by the patents-in-suit, which provide:

Also during the setting operation, upper slip wedge 126 is forced downwardly, shearing shear pin 128. This in turn causes packer elements 40 and 42 to be *squeezed outwardly into sealing engagement with the well bore.*

(A62, 13:63-66 (emphasis added); *see also* A57, 3:21-24; A62, 13:36-39; A80, 14:62-

64.) As shown in Figure A, it is clear that the packer elements, when expanded "outwardly," seal the area between the downhole tool and the well bore.

3. Halliburton's Construction Of "Locking, Sealing Engagement" Is Wrong

Halliburton impermissibly narrows claim 1 by reading limitations into the claim that do not exist. First, Halliburton argues that the downhole tool must be locked by the action of the upper and lower slip assemblies and the packing element of the embodiments disclosed in the '468 patent. (Br. at 53-54.) However, claim 1 is not drawn to a specific structure or apparatus, but rather to a step of placing the tool into locking engagement with the well bore. Accordingly, the limitation is not one of structure. Indeed, the structure by which the tool is positioned into locking, sealing engagement with the well bore is immaterial. *See Cochrane v. Deener*, 94 U.S. 780, 787-88 (1877) (noting that the structure used to carry out a process claim is immaterial).

Halliburton also impermissibly narrows claim 1 to avoid the prior art by arguing that claim 1 covers only "drillable" downhole tools, i.e., tools that *must* be removed from the well bore by drilling.¹² (See Br. at 52, 56.) Claim 1, however, does

¹²Halliburton's implication that only permanent tools are "drillable" is belied by its own Sales and Service Catalog, which shows that any tool can be drilled out

not limit the step of “constructing a downhole tool” to tools that must be removed by drilling. This step only requires that the downhole tool be in “locking, sealing engagement” with the well bore. That is, a tool can be in locking, sealing engagement with the well bore – and later unlocked and pulled out of the well bore – without having to be removed by drilling. Because a retrievable tool can be locked into the well bore, it meets this limitation.¹³

Halliburton tries to give the term an imprimatur of novelty based on an amendment during prosecution over the Watson patent (A1635-39). (Br. at 53.) However, Watson discloses a wiper tool – a completely different tool than those at issue here. Specifically, the Watson wiper tool has no slips or packing element. (A1636.) Nor is it fixed in one position in the well bore, but instead is pumped down the well bore to clear it of fluids. (A1639, 3:7-29.) Thus, although Halliburton may have distinguished its proposed claims over Watson during prosecution, (A1343-44, A1352) its amendment has no significance regarding the novelty of the completely different tools at issue here. Indeed, the claimed downhole tools are “positioned into locking, sealing engagement with [the] well bore” in the same manner as the prior art

of the well bore, whether permanent or retrievable. (A1024-25.)

¹³The statements by Sukup and Harris that a permanent tool is locked in the well bore and can be removed only by drilling (Br. at 54) are thus irrelevant because claim 1 is not limited to such tools.

Sullaway tool. (See A62, 13:20-26; A80, 14:45-51; *see also*, e.g., A1596-97, 6:36-7:23.)

As a result, the district court's construction of "locking, sealing engagement" is supported by the ordinary meaning and the patents-in-suit.

III. The District Court Did Not Abuse Its Discretion In Finding a Substantial Question Of Invalidity

"The patent law imposes certain fundamental conditions for patentability, paramount among them being the condition that what is sought to be patented, as determined by the claims, be new."¹⁴ *Titanium Metals Corp. of Am. v. Banner*, 778 F.2d 775, 780 (Fed. Cir. 1985). "Deference is due the [Patent Office's] decision to issue the patent with respect to evidence bearing on validity which it considered but no such deference is due with respect to evidence it did not consider." *Am. Hoist & Derrick Co. v. Sowa & Sons, Inc.*, 725 F.2d 1350, 1360 (Fed. Cir. 1984) *see also*, e.g., *Applied Materials, Inc. v. Advanced Semiconductor Materials Am., Inc.*, 98 F.3d 1563, 1569 (Fed. Cir. 1996).

¹⁴Halliburton's FAS DRILL® tools (Br. at 13-14) are irrelevant to an anticipation analysis. *See, e.g., Helifix Ltd. v. Blok Lok, Ltd.*, 208 F.3d 1339 (Fed. Cir. 2000) (acknowledging that anticipation analysis compares the construed claims to the prior art); 35 U.S.C. § 102. Furthermore, they are of little or no relevance to an obviousness analysis because Halliburton has not shown that the tools are covered by the asserted claims, or that their commercial success is specifically because of the claimed features. 35 U.S.C. § 103 (noting that comparison is between claims and prior art).

Under the district court's tentative claim construction, as supported above, the court properly found that all of the asserted claims are "subject to a substantial challenge" of invalidity. *See, e.g., Nat'l Steel*, 2004 WL 190257, at *13.

A. The Asserted Claims

For the convenience of the Court, Halliburton's asserted claims are reproduced below in abbreviated form.

1. Claim 1

Claim 1 is directed to a well bore process having three steps: (1) constructing a downhole tool having (a) a center mandrel, (b) a plurality of slips disposed around the mandrel for grippingly engaging the well bore when in a set position, (c) where at least one of the above components is made of a non-metallic material; (2) positioning the tool into locking, sealing engagement with the well bore; and (3) drilling the tool out of the well bore.

2. Claim 30

Claim 30 is directed to a downhole tool comprising (1) a non-metallic center mandrel, and (2) slip means disposed on the mandrel for grippingly engaging the well bore when in a set position.

3. Claim 3

Claim 3 is directed to a downhole tool having a (1) center mandrel; (2) packing means disposed on the mandrel for sealingly engaging the well bore when in a set position; and (3) slip means disposed on said mandrel for grippingly engaging the well bore when in a set position, where the slip means is (a) an upper slip means disposed above the packing means and (b) a lower slip means disposed below the packing means, (c) where the lower slip means is at least partially made of a non-metallic material.

B. Appellees Raised a Substantial Question Regarding Anticipation of the Asserted Claims

The district court found that Appellees raised a substantial question that all of the asserted claims are anticipated by Fisher and that claim 30 is anticipated by Baker.

1. Legal Standard for Anticipation

If a single prior art reference discloses each element of the claim, either expressly or inherently, then the claim is invalid as being anticipated under 35 U.S.C. § 102. *Minnesota Mining & Mfg. Co. v. Johnson & Johnson Orthopaedics, Inc.*, 976 F.2d 1559, 1565 (Fed. Cir. 1992).

Prior art anticipates a means-plus-function claim when it contains identical structure, *or its equivalents*, and that structure performs the same function. *See, e.g., Kegel Co., Inc. v. AMF Bowling, Inc.*, 127 F.3d 1420, 1430 (Fed. Cir. 1997).

2. Fisher Raises a Substantial Question of Anticipation For All of the Asserted Claims

a. Claim 1

Every limitation of claim 1 is disclosed by Fisher.¹⁵ First, Fisher discloses (1) an “improved bridging plug” (A1204, ln. 11) having (a) a center mandrel (A1204, lns. 90-94), and (b) upper slips and lower slips that grippingly engage the well bore when the tool is set (A1205, lns. 1-13), (c) where the center mandrel is “preferably formed of wood.” (A1204, lns. 94-97.)

Second, the Fisher tool (2) is set by pulling up on the sand line, which causes the mandrel to be seated in the segments, pushes the segments out, and causes the upper slips and lower slips to be wedged into engagement with the well bore. (A1205, lns. 51-81.) Thus, the interaction between the upper slips, which prevent upward movement of the plug, and the lower slips, which prevent downward

¹⁵Halliburton’s attempt to denigrate Fisher because it is a “paper patent” (Br. at 33, 60) is misplaced because it is irrelevant to an anticipation analysis. *See, e.g., Frank B. Killian & Co. v. Allied Latex Corp.*, 188 F.2d 941, 944 (2d Cir. 1951) (J. Hand); *Diamond Int’l Corp. v. Maryland Fresh Eggs, Inc.*, 523 F.2d 113 (4th Cir. 1975) (“Even if [the patent] had never been made commercially . . . it may be considered as anticipation.”).

movement of the plug, locks the tool in the set position. (A1205, lns. 3-12.) ("These [upper] slips have upwardly directed teeth 18, which when they engage the [well bore] will prevent upward movement of the plug within the [well bore]. Each of the segments 10 has a stationary slip 19 secured to its lower end, these slips being provided with downwardly directed teeth 20, which, when they engage the [well bore], will prevent downward movement of the plug.").

The bridge plug disclosed in Fisher also has a "sealing device which will engage the interior of the well [bore] and effectively form a packer or seal between the body of the plug and the [well bore] to prevent leakage." (A1204, lns. 30-35.) Pulling up on the sand line causes the packing element to be pushed outward so that it seals the area between the tool and well bore. Accordingly, Fisher discloses "rubber rings 22 [that] also engage the [well bore] and are compressed, forming a packer or seal to prevent the leakage of fluid between the exterior surface of the segments and the [well bore]." (A1205, lns. 68-73.) Fisher thus discloses a tool that is "positioned into locking, sealing engagement with [the] well bore."

Third, Fisher (3) discloses that the tool is made of some "readily destructible material," preferably wood, so it "can easily be drilled out of the [well bore] by a drilling tool for further drilling operations." (A1204, lns. 94-98; *see also* A1204, lns.

16-21 ("it will be relatively easy to remove [the plug] for further drilling operations by a drilling tool.".)

b. Claim 30

Fisher discloses every limitation of claim 30. First, as discussed above, Fisher expressly discloses (1) a downhole tool having a center mandrel (A1204, lns. 90-94) that is preferably made of wood. (A1204, lns. 94-98.)

Second, Fisher discloses (2) upper slips and lower slips. (A1205, lns. 1-12.) The slips are wedged into gripping engagement with the well bore by the interaction between the mandrel and the segments, which sets the tool. (A1205, lns. 51-59; A1205, ln. 125-A1206, ln. 2.) The slip assembly of the Fisher tool thus meets the "slip means" limitation because it performs the claimed function of "grippingly engaging the well bore in the set position," using the same or equivalent structure. *See, e.g., Kegel*, 127 F.3d at 1430. Moreover, the "slip means" of the Fisher tool clearly is in close proximity to the mandrel, and thus is "disposed on" the mandrel. (A1203.)

c. Claim 3

Fisher discloses every limitation of claim 3. First, Fisher discloses (1) a downhole tool having a center mandrel. (A1204, lns. 90-94.)

Second, Fisher discloses (2) “rubber rings 22 [that] also engage the [well bore] and are compressed, thus forming a packer or seal to prevent the leakage of fluid between the exterior surface of the segments 10 and the [well bore]” when the plug is set. (A1205, lns. 68-73.) The rubber rings, or “packing means,” clearly are in close proximity to the mandrel, and thus are “disposed on” the mandrel. (A1203.)

Third, as discussed above regarding claim 30, the (3) upper and lower slips are wedged into gripping engagement with the well bore by the interaction between the mandrel and the tapered segments. (A1205, lns. 1-12; A1205, lns. 51-59.) Thus, functionally, both slip assemblies engage the well bore to prevent movement of the plug when the tool is set. (A1205, ln. 125-A1206, ln. 2.) In addition, as can be seen in Figure B, these “slip means” are located (3)(a) above and (3)(b) below the rubber rings, respectively. (A1203.) Fisher also discloses that the mandrel and the segments are (3)(c) preferably made of wood, a non-metallic material. (A1204, lns. 94-98.) Accordingly, Fisher discloses the “slip means” recited in claim 3.¹⁶ In addition, the “slip means” of the Fisher tool are clearly in close proximity to the mandrel, and thus are “disposed on” the mandrel. (A1203.)

¹⁶Contrary to Halliburton’s argument (Br. at 35-36, 55-56), there is no requirement that the slip wedge “engage the metallic slips,” i.e., be in physical contact with the slips. All the claims require is that the slips be placed into gripping engagement with the well bore when in the set position.

3. Halliburton Mischaracterizes Fisher

Halliburton's argument that Fisher is "inherently incapable of sealing the well bore against leakage" because it has "axial leak paths"¹⁷ (Br. at 34, 55) is nothing more than a diversionary tactic in an attempt avoid Fisher's clear anticipation. Indeed, Halliburton's argument is flatly contradicted by the disclosure of Fisher and the plain language of the asserted claims. Fisher provides as follows:

The plug . . . carries a sealing means which will prevent leakage either between the segments and the casing, or between the sides of adjacent segments which are separated slightly when the segments are expanded.

(A1205, lns. 125-3:2.)

In addition, as the district court recognized, the asserted claims

do not require that the bridging plug perfectly seal the well bore. Claim 1 of the '468 patent, rather requires that the bridging plug is positioned into a locking, sealing engagement with the well bore, and claim 2 of the '540 patent requires a packing means disposed on said mandrel for sealingly engaging the well bore.

¹⁷Halliburton relied upon this same premise in arguing, for the first time, in its Motion for Reconsideration, that Fisher did not anticipate because it is not enabling. (A1746-47.) The district court properly denied Halliburton's reconsideration motion, recognizing that "[t]he claims of the [Fisher] patent disclose that the tool seals the well bore." (A24; *see also* A1206, lns. 25-50, 78-88.) Claims of an issued patent are presumed enabled. *In re Sasse*, 629 F.2d 675, 681 (CCPA 1980). However, because Halliburton's opening brief neither defends its reconsideration motion nor challenges its denial (Br. at 69 n.11), Halliburton has waived any challenge in this Court to the district court's order denying reconsideration.

(A13.) Moreover, the district court's construction is not "result-oriented," as Halliburton argues (Br. at 55), because it is supported by the plain language of the claims.

As a result, the district court did not abuse its discretion in concluding that Appellees raised a substantial question of invalidity in light of Fisher. *See, e.g., Amazon.com*, 239 F.3d at 1359.

4. Baker Raises a Substantial Question of Anticipation Regarding Claim 30

Baker discloses every limitation of claim 30. First, Baker discloses (1) a packer, including a center mandrel, that is constructed entirely of fiberglass. (*See A843-44; A845-48.*)

Second, Baker discloses (2) a slip assembly, having slips and cones, that is directly "disposed on" the central mandrel. *Id.* The slips are wedged into gripping engagement with the well bore by pulling up on the mandrel with the tubing string, which forces the mandrel and cones to move under the slips. The complimentary angles of the cones and slips force the slips to move outward to engage the well bore when the tool is set. The slip assembly of the Baker packers thus meets the "slip means" limitation because it performs the claimed function of "grippingly engaging

the well bore in the set position,” using the same or equivalent structure. *See, e.g., Kegel*, 127 F.3d at 1430.

As a result, the district court did not abuse its discretion in concluding that there was a substantial question of invalidity of claim 30 because it is anticipated by Baker.¹⁸ *See, e.g., Amazon.com*, 239 F.3d at 1359.

C. Appellees Raised a Substantial Question Regarding the Obviousness of the Asserted Claims

The district court properly found that Appellees raised a substantial question of invalidity because the asserted claims are obvious in light of Baker combined with other prior art.

1. Legal Standard for Invalidating Claims For Obviousness

A patent claim is invalid under 35 U.S.C. § 103 if the differences between the claimed invention and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the relevant field. 35 U.S.C. § 103(a); *see also Graham v. John Deere Co.*, 383 U.S. 1, 13-14 (1966). The obviousness determination often is made by

¹⁸Baker also raises a substantial question regarding the obviousness of claim 30. *See, e.g., Johns Hopkins Univ. v. CellPro, Inc.*, 152 F.3d 1342, 1357, n.21 (Fed. Cir. 1998) (“[A] disclosure that anticipates under § 102 also renders the claim invalid under § 103, for ‘anticipation is the epitome of obviousness.’”). Likewise, Fisher raises a substantial question regarding the obviousness of all the asserted claims. *Id.*

comparing the asserted claims to a combination of references. *See Karsten Mfg. Corp. v. Cleveland Golf Co.*, 242 F.3d 1376, 1385 (Fed. Cir. 2001). In holding an invention obvious in view of a combination of references, there must be a motivation to combine the references. *See id.* A motivation to combine references can be located either in a prior art reference, or it can be implicitly in the knowledge of one of ordinary skill in the art. *See, e.g., Motorola, Inc. v. Interdigital Tech. Corp.*, 121 F.3d 1461, 1472 (Fed. Cir. 1997).

2. Baker Combined with Other Prior Art Raises a Substantial Question of Obviousness Regarding Claims 1 and 3

The district court found there was a substantial question that the drilling out step of claim 1 would have been obvious in light of the combined teachings of Baker with either Fisher or Sukup. (A17.) The district court also found that there was a substantial question that the upper and lower “slip means” limitation of claim 3 would have been obvious in light of the combined the teachings of Baker with either Sullaway or Muse.¹⁹ (A18.)

¹⁹That Western’s work in developing an all-composite tool was abandoned is not probative of non-obviousness, as Halliburton argues. (Br. at 62-64.) Indeed, it is entitled to little weight because the work was abandoned due to lack of funding and Western’s bankruptcy.

a. **Claim 1**

Each limitation of claim 1 is either disclosed by or would have been obvious to one of skill in the art in light of the disclosures of Baker combined with Fisher or Sukup. First, Baker discloses (1) a packer, including (a) a center mandrel, that is constructed entirely of fiberglass. (*See A843-44; A845-48.*) Baker also discloses (b) a plurality of slips disposed around the central mandrel to grippingly engage the well bore. (*Id.*)

Second, the Baker packers (2) are set by pulling up on the mandrel with the tubing string, forcing the mandrel and cones to move under the slips. (A843-44.) The complimentary angles of the cones and slips force the slips to move outward, wedging them into gripping engagement with the well bore. The Baker packers are locked into the well bore by maintaining the upward pull on the mandrel, which prevents the slips from disengaging. (*Id.*) The Baker packers are placed into sealing engagement with the well bore by pulling up on the mandrel, thereby compressing the packing element until it expands outwardly to seal the area between the tool and the well bore. (*Id.*)

Third, there is motivation to combine Baker with Fisher or Sukup, or with the knowledge of persons skilled in the downhole tool art to (3) drill the downhole tool out of the well bore. Fisher discloses a bridge plug "preferably formed of wood so

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the plug can easily be drilled out of the [well bore].” (A1204, lns. 94-97.) Sukup discloses a downhole tool with “improved drillability” because a number of components are formed from “high-strength synthetic resins.” (A1615, 7:23-27.) One of ordinary skill in the art would thus be motivated to combine Baker with either Sukup or Fisher to meet the drilling limitation of claim 1.

Furthermore, it was well-known in the art at the time the patents-in-suit were filed that if a retrievable tool, like the Baker packers, could not be unlocked and removed from the well bore, the tool could be drilled out of the well bore. (See, e.g., A1021-25.) Indeed, by at least 1964, Halliburton had designed its R-3 Treating-Production Packer – a *retrievable* packer – for this very purpose.²⁰

A safety joint is provided to allow the tubing to be disengaged from the tool by right hand rotation if conditions prevent normal removal of packer. When safety joint is disengaged, all metal parts left in hole are cast iron and mild steel to *facilitate drilling out*

(A1024 (emphasis added).)

²⁰Halliburton’s contention that Appellees did not show a reasonable expectation of success regarding the drilling out of a downhole tool (Br. at 64) ignores not only the clear disclosures of Fisher and Sukup, but also Halliburton’s own representation that it designed its retrievable R-3 packer to be “easily drilled.” (A1024.) Moreover, as shown below, Halliburton’s argument regarding the upper and lower slip means (Br. at 64) likewise ignores that the exact same dual slip assemblies disclosed by the patents-in-suit were commonly used in prior art tools. (Cf. Figure E (Sullaway) with Figure A (patents-in-suit).)

b. **Claim 3**

Baker, combined with the teachings of Muse or Sullaway, discloses every limitation of claim 3, and therefore renders it obvious. First, Baker discloses (1) a downhole tool having a center mandrel. (A843-44; A845-48.) Second, Baker discloses (2) a packing element that is directly disposed on the mandrel. (*Id.*) As discussed above, during the setting of the tool, the packing element is compressed into sealing engagement with the well bore, and thus meets the “packing means” limitation.

Third, as shown above, the Baker packers have “slip means” disposed on the mandrel. In addition, both Sullaway and Muse disclose the common configuration of slip means positioned (3)(a) above and (3)(b) below the packing element. (See A1592 (Figure F); A865 (Figure G).) Thus, one of ordinary skill in the art would have been motivated to combine Baker with the commonly-known upper and lower slip geometry disclosed in Sullaway and Muse.²¹ Finally, Baker discloses (3)(c) that the entire tool, including the slip means, is made of fiberglass. (A844; A848.)

²¹Halliburton’s representation that Sukup teaches away from using a dual slip assembly (Br. at 62) is beside the point because, as shown above, Sullaway and Muse clearly disclose using dual slip assemblies.

3. Halliburton Mischaracterizes Baker

Halliburton's argument that because the Baker packers are retrievable and attached to the tubing, they do not meet the positioning limitation of being in "locking, sealing engagement with the well bore," is contradicted by the patents-in-suit. (A58, 5:10-12 ("Apparatus 10 can be set in this position by any manner known in the art *such as setting on a tubing string or wireline.*") (emphasis added); A76, 5:33-35.) Indeed, there is no claim limitation that forecloses the Baker packers as prior art because they are set on the tubing or because they are retrievable. In fact, the Baker packers contain slips and a packing element, which the patents-in-suit disclose provide the "locking, sealing engagement" with the well bore.²² (See A57, 3:18-25; A62, 13:36-39; A75, 3:25-28; A80, 13:61-64.)

Furthermore, Halliburton's contentions that the Baker packers are "totally different" than Halliburton's claimed invention (Br. at 38) are unfounded. Halliburton's asserted claims are not limited to any specific purpose, but are directed to downhole tools for use in a well bore. *See, e.g., Schwing GmbH v. Putzmeister Aktiengesellschaft*, 305 F.3d 1318, 1324 (Fed. Cir. 2002) (indicating that functional

²²Baker is not cumulative to either Watson or the Armentrout patent. (Br. at 61.) As shown above, the Watson wiper tool has no slip means and no packing means. (A1636; A1639, 3:7-29.) Likewise, Armentrout discloses an open-hole testing apparatus with no slip means or other means for grippingly engaging the well bore at a fixed position. (A1539-46.)

limitations are not placed on structural devices). It is undisputed that the Baker packers were used in a well bore. Moreover, Harris's opinion that Baker was inapplicable to his work at Western on a permanent downhole tool is not relevant to the invalidity of Halliburton's asserted claims, which are broad enough to cover both permanent and retrievable downhole tools. (A1612, 1:9-12.)

As a result, the district court did not abuse its discretion in concluding that there was a substantial question of invalidity of the asserted claims because Baker combined with other prior art renders the claims obvious. *See, e.g., Amazon.com*, 239 F.3d at 1359.

4. Secondary Considerations Of Obviousness

Halliburton criticizes the district court for improperly finding that the secondary considerations of obviousness did not overcome the primary considerations in its obviousness analysis. (Br. at 58-59.) However, the district court properly considered Halliburton's evidence regarding secondary considerations and weighed it against the primary considerations of obviousness.²³ (A18-19.) *See, e.g., Ryko Mfg. Co. v. Nu-Star, Inc.*, 950 F.2d 714, 719 (Fed. Cir. 1991) (concluding that as long

²³Although the district court's legal analysis of obviousness was proper, BJ does not agree with the court's fact findings regarding the secondary considerations. (A19.) In fact, when fully vetted, the secondary considerations also support that Halliburton's asserted claims are obvious.

as the district court contemplated the secondary considerations, district court could properly determine that the claim was obvious, despite finding that the secondary considerations weighed in favor of the patentee, because the “secondary considerations did not carry sufficient weight to override a determination of obviousness based on primary considerations”). Indeed, although the secondary considerations must be considered in any obviousness analysis, they “do not control the obviousness conclusion.” *Newell Cos. v. Kenney Mfg. Co.*, 864 F.2d 757, 768 (Fed. Cir. 1988).

Moreover, Halliburton’s quibble that the district court improperly discussed the primary considerations of obviousness before the secondary considerations is unfounded: the law does not require the district court to structure its written opinion in a particular order; it only requires that the court consider the evidence of secondary considerations, which it did. *See, e.g., id.; Fromson*, 853 F.2d at 1573 (noting that the Federal Circuit reviews judgments, not opinion language, and that “[a] district court need follow no prescribed grammatical formulation in expressing its findings and conclusions”).

IV. Other Issues Not Addressed by District Court

Although the remaining issues of infringement, irreparable harm, the balance of hardships, and the public interest were not reached by the district court, BJ briefly responds to correct any misimpression created by Halliburton.

A. BJ's Tool Does Not Infringe

Because BJ's mandrel has a core made of brass (A762), it is not made of a "non-metallic material."²⁴ In addition, the slips on BJ's tool are made of cast iron. (*Id.*) Because neither the mandrel nor the slips of BJ's tool are made of a non-metallic material, BJ's tool does not infringe the asserted claims.²⁵

B. Halliburton Has Not Been Irreparably Harmed

Halliburton argues that it is entitled to a presumption of irreparable harm, even though this Court has expressly held that the presumption does not apply unless the movant makes a "clear showing on the first factor, likelihood of success on the merits." *Guttman*, 302 F.3d at 1363. As shown above, Halliburton's strained arguments regarding validity are far from a "clear showing." Halliburton is thus not

²⁴ The composition of the mandrel and whether the core is an integral part of the mandrel are disputed fact issues that were not decided by the district court. (See A762-64.)

²⁵ Additionally, BJ's tool does not meet the drilling out limitation of claim 1 because it is removed from the well bore by milling, not drilling. (A163-64; A56, 1:29-51; A74, 1:32-45.)

entitled to the presumption. Furthermore, the presumption is rebuttable, and BJ has not yet been given the opportunity to rebut it. *See id.*

In addition, Halliburton's assertions of irreparable harm because BJ has undercut market prices are simply wrong. (Br. at 32; 66-67.) In fact, BJ's Python™ tool usually is the highest-priced bridge plug in the market. For example, in the South Texas market, BJ's tool sells for about 10-15% more than Halliburton's tool. (A779.) Accordingly, any price suppression claimed by Halliburton is not because of BJ. (Br. at 32; 66-67.) *See also Nutrition 21 v. United States*, 930 F.2d 867, 872 (Fed. Cir. 1991).

Furthermore, Halliburton's unreasonable delay – over ten months between filing suit and requesting the preliminary injunction – weighs against finding irreparable harm here. *See T. J. Smith & Nephew Ltd. v. Consolidated Med. Equip.*, 821 F.2d 646, 648 (Fed. Cir. 1987); *Nutrition 21*, 930 F.2d at 872 (seven-month delay suggests no irreparable harm).

C. The Balance of Harm Weighs In Favor Of BJ

The balance of harm does not weigh in Halliburton's favor. To the contrary, Halliburton's “weak showing of likelihood of success tips the balance of hardships toward [BJ].” *Illinois Tool Works, Inc. v. Grip-Pak, Inc.*, 906 F.2d 679, 683 (Fed. Cir. 1990). Nor does Halliburton's unsupported accusation of copying tip the balance

in Halliburton's favor. Indeed, Halliburton's copying "evidence" (Br. at 29-30) is nothing more than a recitation of elements disclosed in the prior art. *See supra* at 21-24. BJ has a superior tool, not a copy of Halliburton's tool.

D. The Public Interest Favors BJ

The public interest favors denial of a preliminary injunction where, as here, the validity of the asserted patents has been called into substantial question. *See, e.g., In re Hayes Microcomputer Prods., Inc., Pat. Litig.*, 766 F. Supp. 818, 823 (N.D. Cal. 1991), *aff'd*, 982 F.2d 1527 (Fed. Cir. 1992). For the same reason, the public interest here favors BJ's legitimate right to market a superior tool and to compete against Halliburton. *See, e.g., Illinois Tool Works*, 906 F.2d at 684 (acknowledging that defendant's "continuing right to compete" was "legitimate at this motion stage in view of [the patentee's] 'remote' showing of likelihood of success in proving infringement at trial").

CONCLUSION AND PRAYER FOR RELIEF

BJ Services Company respectfully requests that the Court affirm the district court's decision denying Halliburton's Motion For a Preliminary Injunction.

Respectfully submitted,

Dated: Feb. 10, 2004

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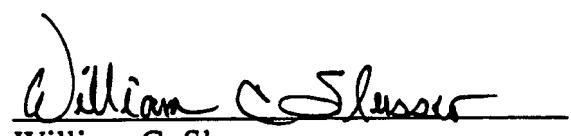
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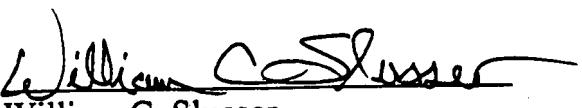
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CERTIFICATE OF COMPLIANCE WITH FED. R. APP. P. 32(a)(7)(B)

I hereby certify that the foregoing brief complies with the type-volume limitation of Fed. R. App. P. 32(a)(7)(B) because it contains 13,743 words as reported by the word count function of Word Perfect.


William C. Slusser

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IN THE
UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT

HALLIBURTON ENERGY SERVICES, INC.,

Plaintiff-Appellant,

v.

WEATHERFORD INTERNATIONAL, INC.,

Defendant-Appellee,

and

BJ SERVICES COMPANY,

Defendant-Appellee.

Appeal from the United States District Court for the
Northern District of Texas in case no. 02-CV-01347,
Judge David C. Godbey.

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TABLE OF CONTENTS

TABLE OF AUTHORITIES	iii
I. INTRODUCTION	1
II. THE DISTRICT COURT'S CLAIM INTERPRETATION WAS LEGALLY ERRONEOUS ON THE PRESENT RECORD.....	2
A. There Is No Legal Authority Suggesting That the District Court's Claim Construction Is Unreviewable	2
B. The District Court Erred in Its Construction of the Claims	5
1. "Slip Means"	5
2. "Packing Means"	10
3. "Disposed On".....	11
4. "Positioning ... Into Locking, Sealing Engagement"	12
III. THE DISTRICT COURT'S VALIDITY ANALYSIS WAS LEGALLY ERRONEOUS ON THE PRESENT RECORD.....	16
A. The District Court Erred in Finding a Substantial Question Regarding the Novelty of the Claimed Inventions	16
1. Fisher Does Not Anticipate the Claims.....	16
2. Baker Does Not Anticipate Claim 30.....	21
B. The District Court Erred in Finding a Substantial Question Regarding the Obviousness of the Claimed Inventions	22
1. The District Court Engaged in Impermissible Hindsight	22
2. The District Court Misapplied Baker	24
3. The District Court Failed to Properly Consider the Objective Evidence of Nonobviousness.....	25

IV.	THE COURT SHOULD DIRECT THE LOWER COURT TO ENTER AN ORDER PRELIMINARILY ENJOINING THE APPELLEES	27
A.	A Reversal Is Permitted When No Material Facts Are in Dispute....	27
B.	HES Is Entitled to a Presumption of Irreparable Harm.....	28
C.	The Presumption Has Not Been Rebutted.....	29
D.	The Balance of Hardships and the Public Interest Support the Grant of a Preliminary Injunction.....	30
V.	CONCLUSION	31

TABLE OF AUTHORITIES

FEDERAL CASES

<i>Abbott Laboratories v. Syntron Bioresearch, Inc.</i> , 334 F.3d 1343 (Fed. Cir. 2003).....	14
<i>Anderson v. International Engineering and Manufacturing, Inc.</i> , 160 F.3d 1345 (Fed. Cir. 1998).....	13
<i>Bell & Howell Document Management Products Co. v. Altek Systems</i> , 132 F.3d 701 (Fed. Cir. 1997).....	3
<i>Biogen, Inc. v. Berlex Laboratories, Inc.</i> , 318 F.3d 1132 (Fed. Cir. 2003).....	12
<i>Black & Decker, Inc. v. Hoover Service Center</i> , 886 F.2d 1285 (Fed. Cir. 1989).....	2
<i>Brookhill-Wilk 1, LLC v. Intuitive Surgical, Inc.</i> , 334 F.3d 1294 (Fed. Cir. 2003).....	14
<i>Budde v. Harley-Davidson, Inc.</i> , 250 F.3d 1369 (Fed. Cir. 2001).....	9
<i>CVI/Beta Ventures, Inc. v. Tura LP</i> , 112 F.3d 1146 (Fed. Cir. 1997).....	2
<i>Ecolochem, Inc. v. Southern California Edison Co.</i> , 227 F.3d 1361 (Fed. Cir. 2000).....	27
<i>Electro Scientific Industries, Inc. v. General Scanning Inc.</i> , 247 F.3d 1341 (Fed. Cir. 2001).....	29
<i>Hybritech Inc. v. Abbott Laboratories</i> , 849 F.2d 1446 (Fed. Cir. 1988).....	29
<i>Interactive Gift Express, Inc. v. Compuserve Inc.</i> , 256 F.3d 1323 (Fed. Cir. 2001).....	10

<i>International Communication Materials, Inc. v. Ricoh Co.,</i> 108 F.3d 316 (Fed. Cir. 1997).....	3, 4
<i>Jack Guttman, Inc. v. Kopykake Enterprises, Inc.,</i> 302 F.3d 1352 (Fed. Cir. 2002).....	3, 5
<i>Johns Hopkins University v. CellPro, Inc.,</i> 152 F.3d 1342 (Fed. Cir. 1998).....	5
<i>Kemco Sales, Inc. v. Control Papers Co.,</i> 208 F.3d 1352 (Fed. Cir. 2000).....	17
<i>Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.,</i> 730 F.2d 1452 (Fed. Cir. 1984).....	26, 27
<i>National Steel Car, Ltd. v. Canadian Pacific Railway, Ltd.,</i> 357 F.3d 319 (Fed. Cir. 2004).....	4, 5, 26
<i>In re Piasecki,</i> 745 F.2d 1468 (Fed. Cir. 1984).....	26
<i>Polymer Technologies, Inc. v. Bridwell,</i> 103 F.3d 970 (Fed. Cir. 1996).....	30
<i>Smith International, Inc. v. Hughes Tool Co.,</i> 718 F.2d 1573 (Fed. Cir. 1983).....	27, 28, 30
<i>Vitronics Corp. v. Conceptronic, Inc.,</i> 90 F.3d 1576 (Fed. Cir. 1996).....	10
<i>Voice Technologies Group, Inc. v. VMC Systems, Inc.,</i> 164 F.3d 605 (Fed. Cir. 1999).....	9
<i>Wang Laboratories, Inc. v. America Online, Inc.,</i> 197 F.3d 1377 (Fed. Cir. 1999).....	12

FEDERAL STATUTES

35 U.S.C. § 112, ¶ 6	1, 9, 11, 17
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I. INTRODUCTION

Appellees, confronted with the district court's erroneous claim construction, ask this Court to affirm the district court's preliminary injunction denial without substantively reviewing that construction, even though the record includes all of the necessary intrinsic evidence to do so. Both are concerned that this Court, applying controlling law to the record, will conclude that the district court's construction was legally erroneous, that the claims as properly construed are neither anticipated nor obvious, and that the denial of a preliminary injunction was an abuse of discretion.

Appellees' concern is indeed justified because key claim elements at issue, the claimed "slip means" and "packing means," are means-plus-function elements that the district court failed to properly construe in accordance with the sixth paragraph of 35 U.S.C. § 112. Other claim limitations in dispute can and should be interpreted, at least preliminarily, based on the intrinsic evidence when, as here, the claims are not ambiguous. Once the claims are properly construed, the remaining issues are readily resolved based on the undisputed content of the references and the evidence of record.

Contrary to appellees' protestations, HES has never argued that this Court's interlocutory claim construction review is necessarily binding in a subsequent

Markman hearing, trial, or appeal.¹ Rather, HES's position is that a determination of the existence of a substantial question concerning patent validity or infringement in this particular case cannot be made without first properly construing the claim language at issue. To hold otherwise would make this, and most, preliminary injunction decisions effectively unreviewable, as the issue of claim construction is often outcome-determinative. Moreover, declining to address and correct clear errors of law will taint subsequent proceedings in this case.

II. THE DISTRICT COURT'S CLAIM INTERPRETATION WAS LEGALLY ERRONEOUS ON THE PRESENT RECORD

A. There Is No Legal Authority Suggesting That the District Court's Claim Construction Is Unreviewable

Both appellees contend that this Court does not have to construe the claims at issue. BJ Opp. at 3; W. Opp. at 21, 28. The practical effect of their position would be to deny HES its right to appeal the denial of a preliminary injunction that was premised on an erroneous claim construction. This would be contrary to the historical practice of this Court, and contrary to the statutory right of a party to immediately appeal from grants or denials of preliminary injunctions, so that legal errors can be corrected.

¹ *Black & Decker, Inc. v. Hoover Service Center*, 886 F.2d 1285, 1296 n.16 (Fed. Cir. 1989) ("Decisions on preliminary relief do not preclude trial on the merits, . . . though preclusion may be appropriate when the evidence is the same."). See also *CVI/Beta Ventures, Inc. v. Tura LP*, 112 F.3d 1146, 1160 n.7 (Fed. Cir. 1997).

For example, in *Jack Guttman, Inc. v. Kopykake Enterprises, Inc.*, 302 F.3d 1352, 1361-62 (Fed. Cir. 2002), a case cited by both appellees, this Court vacated a district court's denial of a motion for a preliminary injunction as being an abuse of discretion when the district court failed to construe claim terms in accordance with the intrinsic evidence. *See also Bell & Howell Document Management Prods. Co. v. Altek Sys.*, 132 F.3d 701, 707 (Fed. Cir. 1997). Indeed, in *Jack Guttman*, the Court began "by reviewing the district court's construction of the disputed claim terms." 302 F.3d at 1357.

The appellees cite only two decisions for the proposition that this Court need not review the district court's preliminary claim construction, neither of which support such a broad proposition and both of which are distinguishable. In *International Communication Materials, Inc. v. Ricoh Co.*, 108 F.3d 316, 318-19 (Fed. Cir. 1997), the Court declined to "definitively construe" the claim at issue when the patentee did not dispute that "the material presented to the district judge pertaining to claim interpretation was incomplete" and the trial court expressly determined that there were "substantial open issues and questions that must be litigated before a finding of infringement can be made, including claim interpretation . . ." Even then, the Court's opinion makes clear that, in affirming the denial of the preliminary injunction, it nonetheless reviewed "the district court's *tentative* claim construction." *Id.* at 319 (emphasis added).

Unlike *International Communication Materials*, the district court below did not expressly state that there were substantial open issues and questions that must be litigated before the terms “slip means” or “packing means” could be preliminarily construed. To the contrary, the district court expressed no hesitation when it construed the “slip means” to exclude a slip support on the opposite site of the slips from the wedge (A10-11), or when it construed any other claim limitation in dispute.

The other case relied upon by the appellees, *National Steel Car, Ltd. v. Canadian Pacific Railway, Ltd.*, 357 F.3d 319 (Fed. Cir. 2004), is the reverse of the situation now on appeal. In that case, the Court found that the district court erred in granting the patentee a preliminary injunction. *Id.* at 1335. Review of the district court’s preliminary claim construction that favored the patentee was not necessary in that case because the Court concluded that the alleged infringer had established a substantial obviousness challenge even under that favorable construction.

In the present case, however, the appellees did not alternatively argue below that a substantial validity defense existed under HES’s interpretation of the terms “slip means” and “packing means.”² The district court likewise did not issue such

² Weatherford conclusorily asserts on appeal that the prior art would render the claims at issue invalid even under HES’s interpretation of the claims. W. Opp.

an alternative holding. Thus, unlike in *National Steel Car*, there is no practical way for this Court to affirm the district court’s decision without first addressing the correctness of its preliminary claim construction. Moreover, as noted in *Jack Guttman*, the fact that discovery has not been completed does not prevent the Court from construing the claims when, as here, the patentee brought all of the appropriate intrinsic evidence to the attention of the trial court,³ and the intrinsic evidence is not ambiguous. 302 F.3d at 1362.

B. The District Court Erred in Its Construction of the Claims

1. “Slip Means”

As the district court acknowledged, appellees never advocated below a construction of “slip means” that differed from HES’s interpretation of “slip means” that included, at a minimum, slips, slip wedges, and slip supports. (A9.) Indeed, BJ’s counsel expressly conceded for purposes of the preliminary injunction hearing that the disputed term “includes at least those three components.” (A1900.) Appellees’ prior concession or silence, though perhaps not barring the

at 39. There is no record support for this position, and this new argument on appeal should not be considered. *Johns Hopkins University v. CellPro, Inc.*, 152 F.3d 1342, 1362 (Fed. Cir. 1998).

³ All of the basic claim interpretation tools were before the district court: the patent claims, their specifications, and the prosecution histories of the patents-in-suit. Moreover, neither appellee has identified any additional relevant evidence or explained how such evidence might affect the interpretation of the terms at issue.

adoption of a different position in the *Markman* hearing, certainly justifies this Court's review.

On appeal, however, BJ now supports the district court's construction of the disputed "slip means" element as requiring only slips and slip wedges, a position that Weatherford also seems to adopt. BJ Opp. at 35-36; W. Opp. at 37. Neither appellee, however, embraces the district court's reasoning or makes any serious attempt to analyze the claims at issue with reference to the other claims in the patents or the clear teachings of the patent specifications.

The thrust of appellees' briefs on this issue is that a means-plus-function element does not encompass structural features that are not necessary to perform or do not actually perform the function recited in the claims. BJ Opp. at 37; W. Opp. at 38. Their conclusion that the disputed slip supports have no bearing on the "gripping engagement" function in the claims, however, is flatly contradicted by the intrinsic record. The slip supports are necessary to place and hold the slips in engagement with the well bore. Indeed, they are so necessary that accused products of both appellees employ such slip supports. (A649; A651.)

The patent specifications make clear that the slip supports play a necessary role in placing the slips in engagement with the well bore as required by the function recited in the claims:

During setting, the setting tool pushes downwardly on upper slip support 110, thereby shearing shear pin 112.

Upper slips 116 are moved downwardly with respect to upper slip wedge 126. Tapers 120 and upper slips 116 slide along upper slip wedge 126, and shoulders 118 on upper slips 116 slide along shoulder 114 on upper slip support 110. Thus, upper slips 116 are moved radially outwardly with respect to center mandrel 102 or 202 such that edges 124 of inserts 122 grippingly [engage] well bore 12.

* * *

The lifting on center mandrel 102 or 202 causes the lower slip support (valve housing 144 in the first packer embodiment 100 . . .) to be moved up and lower slips 136 to be moved upwardly with respect to lower slip wedge 130. Tapers 134 in lower slips 136 slide along lower slip wedge 130, and shoulders 140 on lower slips 136 slide along the corresponding shoulder 142 . . . [on lower slip support 144]. Thus, lower slips 136 are moved radially outwardly with respect to center mandrel 102 or 202 so that inserts 138 grippingly engage well bore 12.

A62 at 13:53 - 14:13 (emphasis added); *see also* A81, 15:10-60.

The district court similarly found the slip supports shown in Figure 8 of the ‘468 patent, in addition to slips and slip wedges, to be an “anchoring component” that “help hold the slips, and therefore the bridge plug, in place in the well bore.”

(A3.) The district court’s holding that the slip supports were not a necessary component of the claimed “slip means” is thus in conflict with its own findings regarding the ‘468 patent disclosure.

BJ’s main evidence to support its contention that the slip supports are not a necessary structure is the Sullaway patent’s disclosed use of a slip wedge to tightly

cam slips into engagement with the well bore. BJ Opp. at 35-36. BJ, however, fails to advise this Court that Sullaway's disclosure also acknowledged the role of the slip supports to permit such engagement:

Continued advancement of the tubular sleeve of the setting tool causes the upper slip support 12 to be advanced downwardly along the packer mandrel 11 thereby causing the slips 17 to advance along upper slip wedge 13 and to be cammed into engagement with the well bore.

(A1596, 6:46-51 (emphasis added).) Thus, to the extent Sullaway is considered relevant to the interpretation of HES's claims, it corroborates the teachings of the patents-in-suit regarding the role of and need for the disclosed slip supports.

Additional intrinsic evidence further confirms that slip supports are part of the claimed slip means assembly. First, claim 22 of the '468 patent and claim 4 of the '540 patent each recite that "said slip means comprises a slip support made of non-metallic material." (A63; A82.) These claims do not introduce the slip support as an optional additional element, or they would have said "said slip means further comprises a slip support." Rather, they provide additional detail concerning the *material* forming the slip support. Moreover, as other claims in the patents-in-suit simply recite "slips" rather than "slip means," a difference in claim scope should be presumed.

Significantly, HES expressly defined the elements constituting its claimed "slip means" in the body of the patent specifications in a paragraph immediately

following the one that expressly defined the “gripping engagement” function for such slip means. (A57, 3:18-27; A75, 3:22-34.) Such disclosure linking the structure with the claimed function cannot be ignored. This Court has recognized that “[t]he specification must be read as a whole to determine the structure capable of performing the claimed function.” *Budde v. Harley-Davidson, Inc.*, 250 F.3d 1369, 1379 (Fed. Cir. 2001); *see also Voice Technologies Group, Inc. v. VMC Systems, Inc.*, 164 F.3d 605, 613-16 (Fed. Cir. 1999).

The ‘468 patent, for example, states that “[t]he slip means may comprise a wedge engaging a plurality of slips with a slip support on the opposite side of the slips from the wedge.” (A57, 3:25-27.) BJ excuses the district court’s disregard of BJ’s stipulated construction and its failure to apply the intrinsic definitions, by alleging that this definition is ambiguous. BJ Opp. at 37. The word “may” in the cited definition, however, had nothing to do with the alleged optional nature of slip supports (and equally modifies slip wedges and slips which appellees even now concede are a necessary component of the claimed slip means). Rather, the word “may,” consistent with section 112, ¶ 6, conveys that the recitation was illustrative and not limiting.

Moreover, every embodiment (all set forth under the heading “Description of the Preferred Embodiment”) disclosed in the patents-in-suit contains one or more slip supports. This fact strongly suggests that such slip supports (or their

equivalent) are not optional elements, but are necessary. *See Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1583 (Fed. Cir. 1996) (claim interpretation that excludes the preferred embodiment “is rarely, if ever, correct”).⁴

2. “Packing Means”

This is the one claim element construed by HES that neither appellee contends was wrong. BJ concedes that the patents disclose “two end packer elements 40 and a central packer element 42” as performing the claimed function of “sealingly engage said well bore when in a set position” and that the “packing means” must be construed to cover those structures and equivalents. BJ Opp. at 40-41. Weatherford acknowledges HES’s position without expressly agreeing or disagreeing with it. W. Opp. at 42-43.

⁴ As discussed at pages 23-24 of HES’s opening brief, the definition of “slip means” in the ‘540 patent includes an additional “retaining means.” (A75, 3:32-33.) BJ argues that the differences in the definitions in the patents-in-suit were not argued below and that HES has waived a different construction on appeal. BJ Opp. at 38 n.9. HES never argued below that the asserted slip means was limited to slips, slip wedges, and slip supports. (*See, e.g.*, A697.) As this Court held in *Interactive Gift Express, Inc. v. Compuserve Inc.*, 256 F.3d 1323, 1347 (Fed. Cir. 2001), “arguments that are based on a specification in evidence and that are in support of an existing claim construction are not barred by the doctrine of waiver.” HES relies on the above definition not to change the scope of its claim construction but as evidence “clarifying or defending the original scope of its claim construction.” *Id.* at 1346. Under either definition, “slip means” will encompass “slip supports,” and such “slip means” are not disclosed in the prior art.

The packer elements 40 and 42 disclosed in HES's patents are annular, axially compressible members disposed directly on the mandrel 20 that expand radially outward, when axially compressed, to fill the space between the mandrel and the bore. (*See* Figs. 2, 3A, 4A, 5A, 6A, 7, and 8; A62, 13:36-39 and 64-66, and 14:14-17.) No other way for sealing the bore is disclosed in the patents.

The district court, however, failed to construe this element in accordance with section 112, ¶ 6. It further erred by merely looking at the sealing structures in the prior art to determine if they performed a sealing function, without any analysis of whether they were identical or equivalent to the disclosed packing elements.

3. “Disposed On”

The issue on appeal is not whether there is some definition of “disposed on” that supports the district court’s actions but instead is what the correct legal construction is on this record. In the context of the patents-in-suit, an artisan would apply the ordinary dictionary definition of “on” that “indicates position on or in contact with an outer surface.” Webster’s Ninth New Collegiate Dictionary (1985)(second definition). That is consistent with the disclosure and the application of the invention. One would not adopt a definition used in unrelated contexts, such as used in the phrase “a town on the border.” BJ Opp. at 43. If general proximity were all that was intended and physical contact were not

necessary, then the claim would have been drafted to say “disposed in the proximity of” or “disposed on or near” the center mandrel.

While BJ is correct that claims are not normally limited to a preferred embodiment, BJ Opp. at 44, in this case, *every* disclosed embodiment has both the slip means and the packing means in direct contact with the central mandrel. There is no written description or enabling disclosure of any embodiments where either of these means is only indirectly disposed on the mandrel. Under such circumstances, where the scope of the claims can be no broader than their support in the specification, it is entirely proper to construe “disposed on” to require physical contact with the center mandrel. *See Biogen, Inc. v. Berlex Laboratories, Inc.*, 318 F.3d 1132, 1136-40 (Fed. Cir. 2003); *Wang Laboratories, Inc. v. America Online, Inc.*, 197 F.3d 1377, 1385 (Fed. Cir. 1999).

HES’s remarks during the prosecution of abandoned patent application Serial No. 515,019 confirm that HES gave notice that “disposed on” required physical contact between the packing means and the center mandrel to distinguish its structure from that of Sukup. HES never proposed or acquiesced to any other construction.

4. “Positioning ... Into Locking, Sealing Engagement”

BJ mischaracterizes HES’s position as one that attempts to incorporate specific, detailed structure of the disclosed tool embodiments into this method step.

Not so. HES simply relies on the claim language. Despite BJ's protests, claim 1 in its entirety, as well as the patent and its prosecution history, must be used to interpret the meaning of the "positioning" phrase.

While it is not necessary for the invention of process claim 1 to employ a specifically disclosed packer embodiment, the claim on its face requires the creation and positioning of a tool comprising a center mandrel and a plurality of slips disposed around the mandrel for grippingly engaging the well bore when in the set position. (A63, 15:31-37.) Moreover, the tool created and positioned must be a drillable one, because the final step in the process is "drilling said tool out of said well bore" and not simply "removing said tool out of said well bore." (A63, 15:42.) For that reason, the claim also requires that a component of the downhole tool constructed be made of a non-metallic (i.e., drillable) material. (A63, 15:31-32.) For the same reason, the claim further requires that the tool be placed in locking engagement with the well bore, for subsequent drilling out.

BJ proposes construing this phrase by reference to a dictionary definition and not to the patent specification. However, no dictionary defines the phrase "locking, sealing engagement" or otherwise suggests that the phrase has a universal, generally accepted meaning, let alone the meaning now proposed by BJ.

As noted by the Federal Circuit in *Anderson v. International Engineering and Manufacturing, Inc.*, 160 F.3d 1345, 1348-49 (Fed. Cir. 1998), "dictionary

definitions of ordinary words are rarely dispositive of their meaning in a technological context,” and “[a] word describing patented technology takes its definition from the context in which it was used by the inventor.” Thus, “the context of the surrounding words of the claim also must be considered in determining the ordinary and customary meaning of those terms.” *Brookhill-Wilk I, LLC v. Intuitive Surgical, Inc.*, 334 F.3d 1294, 1299 (Fed. Cir. 2003); *see also Abbott Labs. v. Syntron Bioresearch, Inc.*, 334 F.3d 1343, 1350-51 (Fed. Cir. 2003). The use of the dictionary, therefore, is but the starting point, not the end of the analysis.

Since the claim employs the distinct phrases “grippingly engaging” and “locking . . . engagement,” there is a presumption that a difference in meaning was intended. BJ’s reliance on the dictionary definition of “locking” to mean “to hold fast or inactive; to fix in a particular situation or operation” (BJ Opp. at 45), however, would apply equally to both situations. The intrinsic evidence, however, makes clear that differences between such concepts were intended. Moreover, Sukup, prior art of record, distinguishes between retrievable tools that are set but not locked and drillable tools that are set and locked wherein “once the tool is set in place, release is not possible by mechanical release features.” (A1615, 7:17-19.)

The ‘468 patent itself describes an operation where there is locked engagement, not merely gripping engagement, through the application of opposing

axial forces such that neither pressure from above nor below the tool will force it out of the well bore but, instead, will cause it to be only more tightly engaged.

(A62, 13:39-43.) A retrievable tool that is merely set in the well bore and engages the well bore walls but which can be unset would not be in “locked . . . engagement” in the contemplation of the ’468 patent.

This interpretation is corroborated by the prosecution history of the ’468 patent where the “locking, sealing engagement” limitation was expressly added to the claims to distinguish over the Watson tool that was positioned in the well bore but not lockingly engaging it. (A1343-44.) Appellees attempt to discount the effect of this amendment and HES’s accompanying remarks on the ground that Watson disclosed a different type of tool than Fisher or Baker. While the Watson tool may not have possessed slips, that was not the basis for the amendment. It was to distinguish any tool set in a well bore that engaged the well bore in some fashion, yet could be removed without drilling because it was not lockingly engaged in the well bore.

As to the “sealing engagement” limitation, HES and BJ are in agreement that the verb “seal” means to make secure against leakage. BJ Opp. at 46. Neither BJ nor Weatherford is able to explain how a device that only partially seals (i.e., leaks), is secure against leakage.

III. THE DISTRICT COURT'S VALIDITY ANALYSIS WAS LEGALLY ERRONEOUS ON THE PRESENT RECORD

As explained in detail in HES's opening brief, once the claim limitations at issue are properly construed, it is apparent that the prior art applied by the district court does not raise substantial questions about the novelty or obviousness of the claimed inventions. HES relies primarily on its previous submission but will reply briefly to appellees' attempts to avoid a reversal.

A. The District Court Erred in Finding a Substantial Question Regarding the Novelty of the Claimed Inventions

1. Fisher Does Not Anticipate the Claims

Fisher discloses upper slips 17 and lower slips 19, but fails to disclose the slip wedges⁵ and slip supports required by the claimed "slip means." Neither appellee introduced any evidence below to establish that Fisher's slips or wooden cones were structurally equivalent to any of the slip means assemblies disclosed in the patents-in-suit. The district court likewise made no such finding. Its analysis begins and ends with finding that Fisher's slips perform the "gripping engagement" function of the claims.

⁵ Assuming *arguendo* that Fisher's conical bores constitute "slip wedges," they are disposed on the interior surfaces of segments 10 (A1204:90-94) and therefore cannot physically engage the slips (disposed on the exterior side of segments 10 (A1204:105 - A1205:12)) as in HES's disclosed structures.

The fact is Fisher uses a primitive structure that relies on little more than a set of upwardly and downwardly directed teeth to engage the well bore. Fisher's lower slips 19, for example, are stationary. Nor do Fisher's slips use slip supports or slip wedges to aid in the locking engagement of the slips. Consequently, the way Fisher's slips function is substantially different from the claimed "slip means," and the results obtained by Fisher are inferior. *See Kemco Sales, Inc. v. Control Papers Co.*, 208 F.3d 1352, 1364 (Fed. Cir. 2000) ("two structures may be 'equivalent' for purposes of section 112, paragraph 6 if they perform the identical function, in substantially the same way, with substantially the same result"). Accordingly, there is no basis in the present record to conclude that Fisher anticipates these claims.

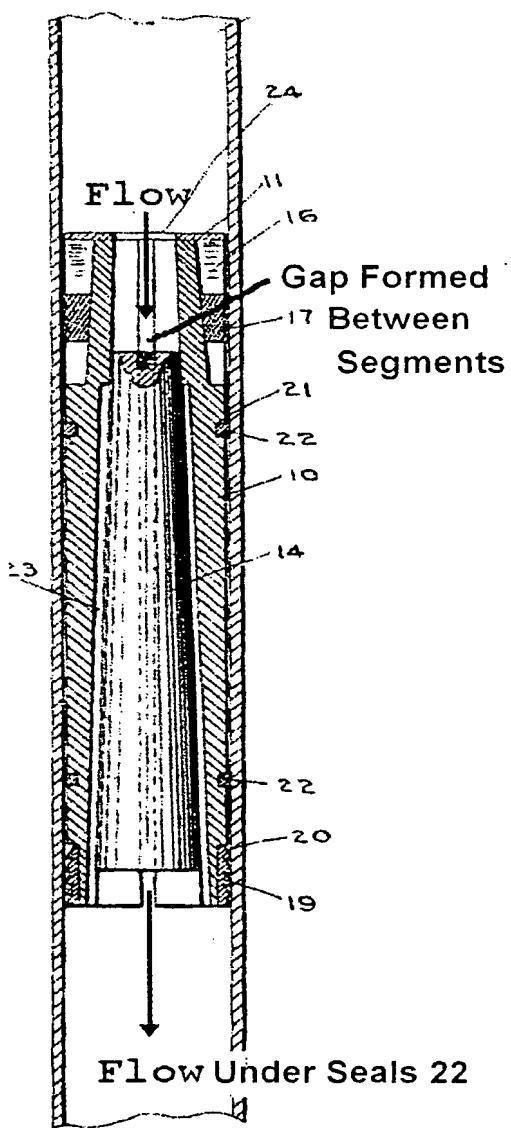
In addition, Fisher also does not anticipate these claims because its slips are located on segments 10, and not on the central mandrel 14. Fisher's positioning of its rubber rings 22 on segments 10, rather than the mandrel itself, is yet an additional reason why claim 3 ('540 patent) is not anticipated.

Finally, Fisher does not anticipate claim 1 ('468 patent) or claim 3 ('540 patent) because it neither positions its tool in "sealing engagement" with the well bore nor possesses "packing means." Fisher's disclosure on its face is sufficient to rebut any claim that "the annulus between the tool and well bore is secure against leakage." BJ Opp. at 46.

400007107 "09090000

Fisher

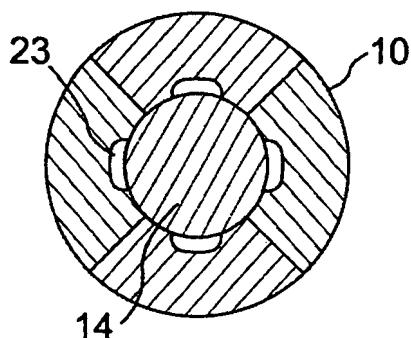
FIG. 2



As shown, Fisher's tool, when expanded, forms flow paths through the tool between the separated segments. (See A1203, Fig. 2 (draw bar 15 omitted and red material added).) As stated in Fisher's specification, when the plug is set, the mandrel 14 moves up, "causing it to expand the segments [10]" and thus, resulting in their "separation." (A1205:56-65.) This separation is clearly illustrated in Fig.

2. In light of such a teaching, one can readily discern how Fig. 6 will look when such segment 10 separation takes place:

UNEXPANDED TOOL



EXPANDED TOOL

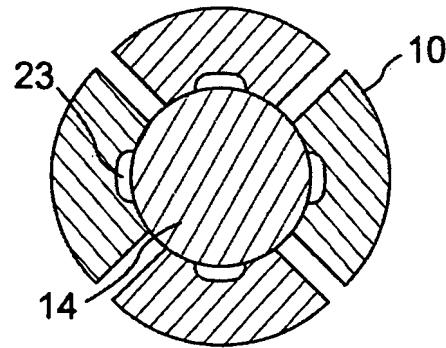


FIG. 6

FIG. 6'

The gaps between the four segments, demonstratively shown above, will form four flow paths that extend for the entire length of the tool along the outer surface of the mandrel 14, passing under rings 22. Since rings 22 are fatally spaced away from, rather than "disposed on" the mandrel 14, there is no possible way for such rings, when put in tension, to expand radially inward to fill and seal the resultant gaps between the separated segments.

In the face of the undisputed fact that the Fisher tool allows fluid flow (or "leaks") along its flow paths, appellees attempt to dodge this fact by claiming that "no supporting evidence of record" exists to show that Fisher does not enable a

sealing tool and that HES did not raise the issue of Fisher's lack of enablement until it filed its motion for reconsideration. W. Opp. at 43-45; BJ Opp. at 56. Those assertions, however, are baseless.

After Weatherford first cited Fisher in its Sur-Reply, HES in a timely response expressly argued that “[a]lthough the Fisher patent says it seals the well bore – it does not and is no more than another failed attempt supporting the non-obviousness of Halliburton’s inventions.” (A1233-34.) The evidence establishing that Fisher does not seal, as discussed above, is found in the Fisher patent itself. In addition, HES used a model of the Fisher tool as demonstrative evidence at the preliminary injunction hearing without objection in support of its argument that Fisher was incapable of sealed engagement with the well bore.⁶

Appellees therefore must hide behind the district court’s erroneous conclusion that the claims broadly cover a leaking tool, arguing that the claims do not call for a perfect seal. The claims, however, do call for sealing engagement (*i.e.*, secure against leakage), not ineffective, attempted sealing engagement. Finally, HES notes that appellees, like the district court, conclusorily assume that Fisher’s rubber rings 22 are the structural equivalent of the three-element packer

⁶ (A1892-93.) Only after the preliminary injunction hearing when HES sought court permission to introduce the Fisher model into the record did Appellees lodge an objection.

disclosed in the patents-in-suit simply because they attempt to perform some sealing function. *See, e.g.*, W. Opp. at 43. The record, however, is devoid of any analysis to suggest that they in fact are equivalent to the claimed “packing means.”

2. Baker Does Not Anticipate Claim 30

The only claim the district court found to be anticipated by the Baker references was claim 30 ('468 patent). Appellees do not contend on appeal that any other claim is anticipated by these references.

As discussed above, the district court's anticipation determination is premised on its erroneous construction of “slip means” in claim 30. It is not sufficient that Baker discloses structure that grippingly engages the well bore in the set position. It must instead disclose structure that is identical or equivalent to the structure disclosed in the '468 patent, namely, the slip means assembly comprising slips, a slip wedge, and slip supports on the opposite side of the slips from the wedge. Baker, however, indisputably lacks slip supports on the opposite side of the slips from the wedges.

Neither appellee introduced any evidence below to establish that Baker's slips or slip wedges were structurally equivalent to any of the slip means assemblies disclosed in the patents-in-suit. The district court likewise made no finding. As a result, there is no basis in the present record to conclude that Baker anticipates claim 30.

B. The District Court Erred in Finding a Substantial Question Regarding the Obviousness of the Claimed Inventions⁷

1. The District Court Engaged in Impermissible Hindsight

The district court's opinion is devoid of any explanation of how and why a person of ordinary skill would be motivated to combine the teachings of the prior art to render the claimed inventions obvious.

The district court found that the Baker references and the knowledge of abnormal plug drill outs alone did not render claim 1 ('468 patent) obvious. (A17.)

Nonetheless, Weatherford asserts that the district court "implicitly" found Fisher and Sukup to provide a motivation to use non-metallic packers such as Baker in applications requiring drill-out rather than retrieval. W. Opp. at 48. Similarly, BJ conclusorily asserts that one would be motivated to combine Fisher or Sukup with Baker but fails to explain its reasoning. BJ Opp. at 60-61.

Contrary to appellee's hindsight, Sukup demonstrates that persons of ordinary skill would not have been motivated to use Baker's fiberglass packer in drill-out applications. While Sukup teaches the desirability in 1987 to use non-metallic materials in a permanent downhole tool, the specific high-stressed

⁷ The district court's erroneous claim construction tainted its obviousness analysis for the reasons noted above, which will not be repeated here. Appellees also fail to separately argue the obviousness of claim 30 ('468 patent) other than to assert that the district court's finding that it was anticipated necessarily raises a substantial question regarding its obviousness. BJ Opp. at 58 n.18.

components at issue in HES's claims (the mandrel and the slips) were virtually the only components not enumerated in Sukup as non-metallic candidates. (See, e.g., A1615, 7:23-27, 47-55, 8:3-20.) This teaching away was the direct result of the failure of Sukup and Harris to build a workable all-composite drillable tool. (A1110; A1115-20; A1127-28.) As a consequence, one of ordinary skill would hardly be motivated to combine Fisher, Sukup, and/or Baker to arrive at the invention of claim 1. Indeed, Baker itself did not arrive at the invention.

The district court's hindsight combination is even more apparent with respect to claim 3 ('540 patent) which requires upper and lower slip means. Sukup (a reference cited by the PTO during prosecution) specifically taught away from existing dual slip assemblies known to require "relatively high internal setting forces." (A1612, 1:65 - 2:27.) Instead, it advocated the use of a single slip assembly design 360 (A1607, Fig. 1; A1612, 2:54-59). Any alleged motivation to use non-metallic materials would only drive the skilled artisan toward the Sukup double wedge single set of slips design and away from a dual slip design that required high stress to work.

Relying on a selected portion of a sentence in Sukup suggesting that a dual slip configuration is “generally acceptable” (A1612, 2:19-20), Weatherford now contends that Sukup cannot be relied upon as a teaching away from the claimed combination. W. Opp. at 49. The sentence in question, however, does not say or

teach that such dual slip configurations can or should be modified to achieve HES's invention. Moreover, Weatherford fails to mention that the sentence explains that such configurations are not "the most efficient arrangement" and that there is still a need for a "readily drillable" tool "requiring a relatively low internal setting force." (A1612, 2:19-28.) As Sukup's design expected reduced drilling times by as much as a factor of four (A1615, 7:54-55), no one would be motivated by Sukup's disclosure to return to those now "inferior," higher stress dual slip means configurations.

Weatherford also argues that Sukup has "slip supports" or a structure that is equivalent. W. Opp. at 49-50. The structure Weatherford identifies, however, is on the same side of the slips as the wedge, not the opposite side as in the claimed slip means. Moreover, appellees offered no evidence below to suggest that Sukup's single slip assembly was equivalent to the slip means assemblies disclosed in the patents-in-suit.

2. The District Court Misapplied Baker

Because the district court merely equated "locking engagement" to slips that "bite into the casing" (A16), it erroneously concluded that the Baker device could be positioned into locking, sealing engagement as required by claim 1. Appellees continue to advocate this approach on appeal. *See, e.g.*, BJ Opp. at 63-64.

Baker's tension packers can be set (expanded), but could never be "locked" in the set or expanded position. These tension packers are suspended from the well head on tubing and remain set only as long as tension is applied to the tubing. (A844.) The Baker tool could never be left in the well as shown in Fig. 1 of the patents and remain "locked" in sealing engagement as Claim 1 ('468 patent) requires.

Weatherford contends that because a sentence in the '468 patent states that "[a]pparatus 10 can be set in this position by any manner known in the art such as setting on a tubing string or wire line" (A58, 5:10-12), this would include the Baker tools suspended by tubing. Weatherford ignores HES's clear disclosure of a tool that is locked and later drilled. Whether tool 10 is initially lowered into the well bore by a tubing string or a wire line, that string or line must be removed to leave the tool in locked, sealing engagement, so that a drill later can be applied to drilled it out.

3. The District Court Failed to Properly Consider the Objective Evidence of Nonobviousness

Although appellees state that they do not agree with the court's factual findings regarding objective evidence of nonobviousness, they make no serious attempt to explain why those findings were clearly erroneous or otherwise challenge the arguments and evidence HES raised in Sections II.C.1, II.C.2, and IV.D.2 of its opening brief.

Weatherford, for example, cites *National Steel Car* to suggest that evidence relating to failure of others and long felt need can be ignored. W. Opp. at 51. Those factors were ignored in *National Steel Car* because of a finding by the district court that customers were satisfied with the existing railway cars. 357 F.3d at 1340. There is no similar finding in this case. BJ discounts HES's reliance on Western's 1980s failed attempts, urging that the work was abandoned due to a lack of funding and company bankruptcy. BJ Opp. at 59 n.19. However, Mr. Harris expended in excess of \$125,000 for this composite tool development project (A1140-41) before concluding that it was "really just a failure." (A 1120.)

Weatherford also erroneously maintains, with no explanation, that there is no nexus between the commercial success of the patented product and the claimed inventions. W. Opp. at 51. Weatherford did not raise this argument below and therefore this Court should not consider this untimely argument on appeal.

Appellees admit that the district court weighed such objective evidence "against the primary considerations of obviousness" (BJ Opp. at 64; W. Opp. at 50-51), despite this Court's holding in *Lindemann Maschinenfabrick GmbH v. American Hoist & Derrick Co.*, 730 F.2d 1452, 1461 (Fed. Cir. 1984), to the effect that it is indeed "error" to do just that. *See also In re Piasecki*, 745 F.2d 1468, 1474 (Fed. Cir. 1984). Rather than acknowledge this error, BJ mischaracterizes HES's argument as suggesting that "the district court improperly discussed the

primary considerations of obviousness before the secondary considerations.” BJ Opp. at 65. The district court was free to discuss the *Graham* factors in whatever order it liked. What is objectionable under *Lindemann* was to first reach a conclusion about the obviousness of the claimed invention before considering the objective evidence of nonobviousness. 730 F.2d at 1461.

None of the cases appellees cite violates the holding of *Lindemann*. Weatherford’s reliance on *Ecolochem, Inc. v. Southern California Edison Co.*, 227 F.3d 1361, 1376 (Fed. Cir. 2000), for the proposition that one examines the objective evidence to see if it rebuts a *prima facie* case of obviousness, is misplaced. That procedure was used for one claim because of a prior Ecolochem concession of *prima facie* obviousness on that claim. As to all other claims, the Court assessed the objective evidence along with all the other *Graham* factors. *Id.* at 1375-76.

IV. THE COURT SHOULD DIRECT THE LOWER COURT TO ENTER AN ORDER PRELIMINARILY ENJOINING THE APPELLEES

A. A Reversal Is Permitted When No Material Facts Are in Dispute

When the record permits, this Court has entered a reversal with instructions directing the district court to enter a preliminary injunction. *Smith International, Inc. v. Hughes Tool Co.*, 718 F.2d 1573, 1582 (Fed. Cir. 1983). There, the district court found infringement and validity but declined to grant preliminary relief, because the extent of infringement was in dispute. *Id.* at 1576-77, 1579-80. As far

as can be determined, the district court did not itself render any specific findings on the issues of irreparable harm, balance of hardships, or public interest. This Court, holding that the extent of infringement was irrelevant, presumed irreparable harm and found no bona fide equitable reason in the record that supported a denial of preliminary relief. *Id.* at 1581.

As discussed in HES's opening brief, this is the exceptional situation where there are no material facts in dispute and the interest of justice warrants an order directing the issuance of a preliminary injunction.

B. HES Is Entitled to a Presumption of Irreparable Harm

HES's unchallenged proofs that Weatherford's products contained each and every limitation of the claims entitle it to a presumption of irreparable harm. *Smith International*, 718 F.2d at 1581. Weatherford elected to only contest validity below. (A815-16; A1039-40 at n.2.)

BJ also did not contest below that its original Python tool raised a substantial question of infringement. The arguments it did raise regarding its modified Python tool present no material factual disputes requiring a remand, as discussed at pages

31 and 65-66 of HES's opening brief.⁸ Thus, it is likewise appropriate for this Court to presume irreparable harm on account of BJ's actions as well.

C. The Presumption Has Not Been Rebutted

Appellees rely upon HES's alleged ten month delay in seeking preliminary injunctive relief to rebut the presumption of irreparable harm. However, as noted in *Hybritech Inc. v. Abbott Laboratories*, 849 F.2d 1446, 1457 (Fed. Cir. 1988), "a showing of delay does not preclude, as a matter of law, a determination of irreparable harm." Moreover, by Weatherford's own admission, Weatherford met with HES in December 2001, HES was permitted to inspect Weatherford's product and interview its personnel in January 2002, and HES obtained a witness statement from Mr. Harris in March of 2002. W. Opp. at 15-16, 60-61. These facts demonstrate not laches but HES's good faith in avoiding a rush to institute litigation. Indeed, the very delay Weatherford complains of was one it orchestrated in the hopes that HES would forego suit altogether.

⁸ BJ raises the new argument on appeal that the drilling out limitation of claim 1 ('468 patent) is not met because it practices milling, not drilling. BJ Opp. at 66 n.25. As such, it should not be considered. *Electro Scientific Industries, Inc. v. General Scanning Inc.*, 247 F.3d 1341, 1350 (Fed. Cir. 2001) (holding noninfringement argument waived when not raised below). BJ also fails to inform the Court about other references in the same document to BJ's reliable "drill out" (A152; A159) and other statements attributable to BJ admitting that BJ had drilled out its tool and touting the rapid drillability of its product (A143; A640 at ¶ 15a; A763 at ¶ 10).

Upon completing its pre-suit investigation, HES promptly filed suit in June 2002. *See Polymer Technologies, Inc. v. Bridwell*, 103 F.3d 970, 975-76 (Fed. Cir. 1996) (ruling alleged four month delay did not rebut presumption of irreparable harm).

Finally, Weatherford's contention that HES has acquiesced to infringement by Baker Hughes is contradicted by its own acknowledgement that Baker has agreed to submit that dispute to ADR. W. Opp. at 62. Moreover, as this Court recognized in *Polymer Technologies*, 103 F.3d at 975-76, “[t]he fact that other infringers may be in the marketplace does not negate irreparable harm” and “[a] patentee does not have to sue all infringers at once.”

**D. The Balance of Hardships and the Public Interest
Support the Grant of a Preliminary Injunction**

Appellees' remaining arguments are premised on the fact that a preliminary injunction would disrupt their business unfairly. However, as noted in *Smith International*, when a party takes a calculated risk that it might infringe an opponent's patents and fails to raise a substantial challenge to validity of the patents, “it will not now be heard to say that public policy is in its favor.” 718 F.2d at 1581.

V. CONCLUSION

For the foregoing reasons, HES respectfully requests the relief set forth at pages 68-69 of its opening brief.

Respectfully submitted,

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March 12, 2004

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I certify that the foregoing REPLY BRIEF FOR APPELLANT
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